

# **A STATISTICAL TOUR OF CALIFORNIA'S GREAT CENTRAL VALLEY – 1998**

**Prepared at the request of  
Assembly Member Dennis Cardoza**

**By**

**Kenneth W. Umbach, Ph.D.**

**August 1998**

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*This report looks at the eighteen counties of California's Great Central Valley. The presentation combines capsule descriptions with graphs and charts encompassing a selection of statistics on land, population, and social and economic indicators. This is a revised and expanded edition of a paper published in 1997.*

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## Foreword

For some time now, the emergence of Central California, dominated by the Great Central Valley, as a true third force in the politics and economy of California, has been a frequent topic of discussion. Correctly, analysts of every sort have been noting that the old bipartite division of California into North and South has grown obsolete. In every way imaginable, California is now North, South, and Central. The recent decision of the University of California to establish a tenth campus at Merced only reinforces the truth of this proposition.

And yet what does this new centrality of California truly mean? Like any emergent region, the Great Central Valley is too much in the process of development to be described by any one category or metaphor. The Great Central Valley, after all, is both northern and southern in its extent, at once rural and urban, agricultural and industrial. Its principle of unity, aside from the Great Central Valley itself, remains obscure. Do the great rivers of the region, the Sacramento and the San Joaquin especially, still provide the unifying force they did in the 19<sup>th</sup> Century? Or have Interstate 5 and Highway 99 replaced both rivers and railroad as the unifying factor?

The question of demographics is even more elusive, for over the past quarter of a century the Great Central Valley has welcomed unto itself literally the peoples of the world and has become the most polyglot portion of the state. Is the Central Valley a culture or a state of mind, it can be asked. Is there, for example, a unity of urbanism extending from Bakersfield to Redding and embracing all the cities in between? Indeed, is there emerging in the Central Valley a new kind of poly-sited metropolis: individuated, autonomously governed, yet forming, cumulatively, a unified metropolitan entity that just happens to have a dozen or more names and a dozen or more governments but is in reality a parallel creation to metro-San Francisco and metro-Los Angeles?

These and other questions will continue to be asked and in part answered in the years to come; for the next decades, after all, will be the Central Californian years, the Great Central Valley years, of the Golden State. Demographers predict the rise of the population of California by some ten million in the next decade and a half. Central California will capture much of this growth.

Hence it is important to have at hand a clear, concise, and statistical profile of this emergent region: which is exactly what Dr. Kenneth W. Umbach of the California Research Bureau of the California State Library has created. In less than 100 pages, Dr. Umbach has suggested through elegantly presented statistics, graphs, and charts both the complexity and the broad socio-economic and cultural structures of Central California. Here, then, is a statistical Baedeker's guide to a rising colossus. Here is a window on the present -- and the future.

For nearly a decade, policy analysts such as Dr. Umbach at the California Research Bureau of the California State Library have been pursuing and presenting in clear and

concise formats the research that our elected officials need if they are to guide California safely and creatively into its future. From this perspective, *A Statistical Tour of California's Great Central Valley -- 1998* will help shape the Valley's future by making sure that public policy decisions affecting this region are anchored not only in vision, but in solid statistical research.

**Dr. Kevin Starr**  
**State Librarian of California**

## Introduction to the 1998 Edition

As a result of the interest in the first edition of *A Statistical Tour of California's Great Central Valley* and of the unique significance of the Central Valley, Assembly Member Dennis Cardoza requested that the report be updated and reissued. The California Research Bureau is pleased to offer this revised and expanded edition in response to that request.

All of the charts and graphs in the *Statistical Tour* are based on data published by the U.S. Bureau of the Census, California Department of Finance, California Department of Food and Agriculture, and other recognized sources. Where possible, I have updated the previous edition's charts to reflect more recent data. Some charts, based on data not updated since the 1997 publication, have not been revised. This is especially the case where data were based on the 1990 Census or drawn from the 1994 *County and City Data Book*. Even in those cases, however, I have sought to find newer information to confirm, supplement, or clarify the original data. In all cases, charts have been rechecked for accuracy, corrected in some cases, and, where possible, redesigned with improved layout. Most of the charts have explanatory titles. For that reason, the charts tell the basic story, and further explanation is not always provided in the text.

Inevitably, in a document reflecting so many numbers, there may be errors, and I would appreciate readers' bringing them to my attention.<sup>1</sup> As this is an overview of many topics, detailed examination of data or of limitations of the data has not been possible in this document. The reader should consult the source documents for more complete information.

I have taken the opportunity throughout to revise for style and clarity and to correct minor errors, and have added several endnotes and a selected bibliography encompassing both statistical data sources and narratives relating to the Central Valley. This edition also includes some new sections. The lists of specific endangered plant and animal species in the Central Valley have been deleted from this update, but detailed information is available on the Internet for those who would like to examine it. Information is now included on native plants and other resources within the Great Central Valley.

The next update of the *Statistical Tour* is planned for publication after data become available from the 2000 Census, most likely late in 2001 or early in 2002. Specific topics relegated to the Central Valley may be addressed in separate supplemental reports before then. Suggestions for improvements or additional topics may be directed to the author at [kumbach@library.ca.gov](mailto:kumbach@library.ca.gov), or via the address on the cover.

### Acknowledgements

Thanks are due to several staff members of the California Research Bureau who made valuable contributions to this paper. Most notably, Jennifer Ruffolo and Dennis O'Connor provided information and wrote sections on environmental issues. Others who have contributed directly and indirectly include Elias Lopez, Jennifer Swenson, and Helen Roland.

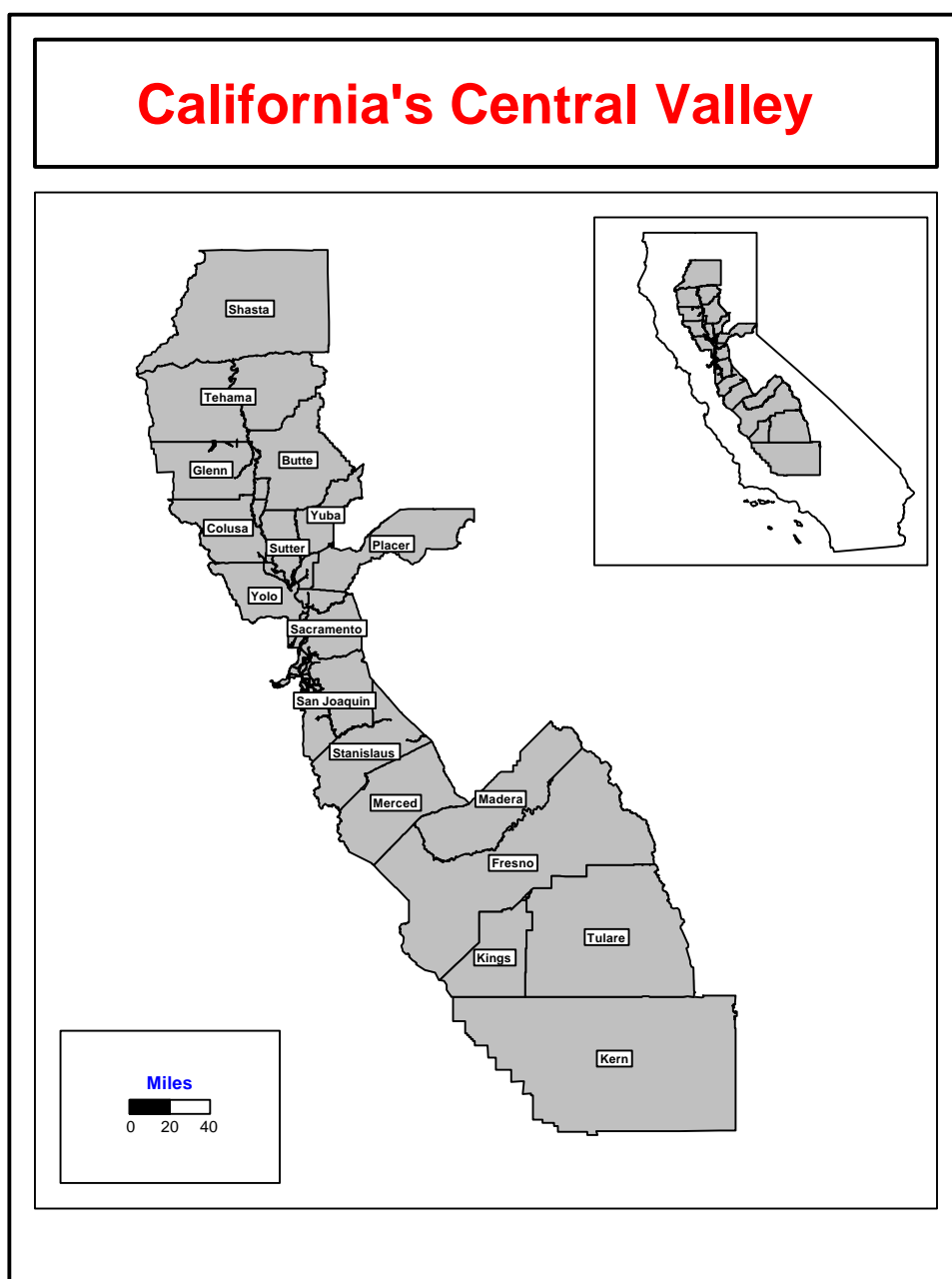
Needless to emphasize, the work of CRB clerical staff has been invaluable. Special thanks go to Judy Hust and Trina Dangberg for seeing that the paper was proofed, properly formatted, and published.

Last, but not least, I would like to thank State Librarian Kevin Starr for his gracious foreword to this revised and expanded edition of the Statistical Tour.



## What is the Central Valley?

California's Great Central Valley stretches from Shasta County to Kern County – some 400 miles long and typically 40 to 60 miles wide.<sup>2</sup> It encompasses all or part of 18 counties with a total of over five million people and over 42,000 square miles – one-sixth of the population and more than two-fifths of the land area of the state.



Not all of the Central Valley is encompassed in these counties. The list omits Solano County (south of Yolo and west of Sacramento), although *geographically* much of

Solano's land area falls within the valley. Because Solano touches on the San Francisco Bay, the county is included in the Bay Area, not in the Central Valley, for planning and statistical purposes.

Portions of some of the 18 counties fall outside the valley. Some counties reach into the Sierra foothills and beyond, and much of Shasta County is north of the valley. Placer County reaches well into the Sierra, although most of the county's residents live in the Valley and face issues of growth, development, and conservation typical of Central Valley communities.

All in all, these 18 counties are clearly separate from the urban centers of San Francisco, Los Angeles, Riverside-San Bernardino, and San Diego, and they are, for the most part, distinct from the coastal, mountain, and desert regions of the state.

To the extent they think about it at all, many urban Californians see the Central Valley as "flyover country," the area one flies over or drives through to reach places of greater interest. Or they may see the Valley simply a source of agricultural goods as diverse as cotton, tomatoes, and rice – nearly \$16 billion worth of production value in 1996. That figure, by the way, is 60 percent of California's total agricultural production value for 1996.

To increasing numbers, however, at least parts of the Valley are *home*, as San Francisco Bay Area workers discover the less costly real estate of Modesto, Ripon, and Stockton.

The Central Valley is indeed centered on agriculture. Eight of California's 15 top producing agricultural counties are in the Central Valley, and of the top seven counties, only one (coastal Monterey) is not encompassed in the area from San Joaquin to Kern. The San Joaquin Valley is not only the most productive agricultural area in California, it is widely considered the most productive in the *world*. This productivity has not come easily, as it has required the combined efforts of laborers, land-owners, agricultural researchers, hydraulic engineers, and many others over generations. It also reflects a range of soils and local climates conducive to specific crops.

Much of the economic activity of the Central Valley that is not *directly* agricultural is at least associated with agriculture. Associated industries include packing, shipping, processing, and the myriad specialties needed to support agricultural enterprises, from irrigation systems to pesticide research. Some observers attribute as much as 30 percent of the Central Valley's total economy to agriculture, considering indirect "multiplier" effects. Rapid and accelerating population growth in the Valley, however, does not simply reflect burgeoning agriculture, nor can long-term prosperity rest exclusively on the products of the land.

## **The Central Valley is Large and Diverse**

Although the term “the Central Valley” refers to an area stretching from Shasta to Kern, that area does not constitute a single community in any sense of the term. The length of the valley, about 400 miles, approaches the distance between Chicago, Illinois, and Pittsburgh, Pennsylvania, localities with distinct local identities, media outlets, and labor pools. It typically takes about 8 hours to drive from Redding, at the north end of the valley, to Bakersfield, at the south end. For that reason, little direct interaction spans the length of the valley. Fresno, in the heart of the valley, is a three to four hour drive from Sacramento and two hours or more from Bakersfield, depending on traffic and weather conditions.

No single newspaper or radio or television station serves the entire Central Valley, or even a preponderance of it. Separate media markets serve many communities within the Central Valley, including Bakersfield, Fresno, Merced, Modesto, Stockton, Sacramento, Chico, Red Bluff, and Redding. Stockton and Sacramento share a television market but have different local newspapers and radio stations. Other cities and towns throughout the valley also have local newspapers and radio stations. However, little by little, the growth and penetration of the Internet and its Worldwide Web are extending local media outlets beyond their traditional local markets. It is too soon to tell how this development will affect the Central Valley, but the growing impact of the Internet is worth watching.

Agriculture permeates the valley, but crops vary, and no unified “agricultural community” encompasses the entire area. Instead, the Valley has many agricultural interests with different concerns and whose shared interests, including water and environmental issues, are not unique to the valley.

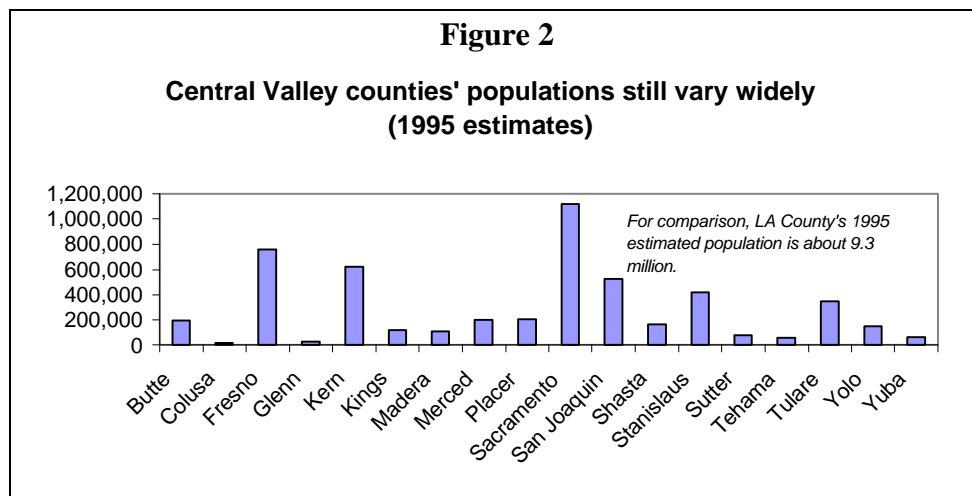
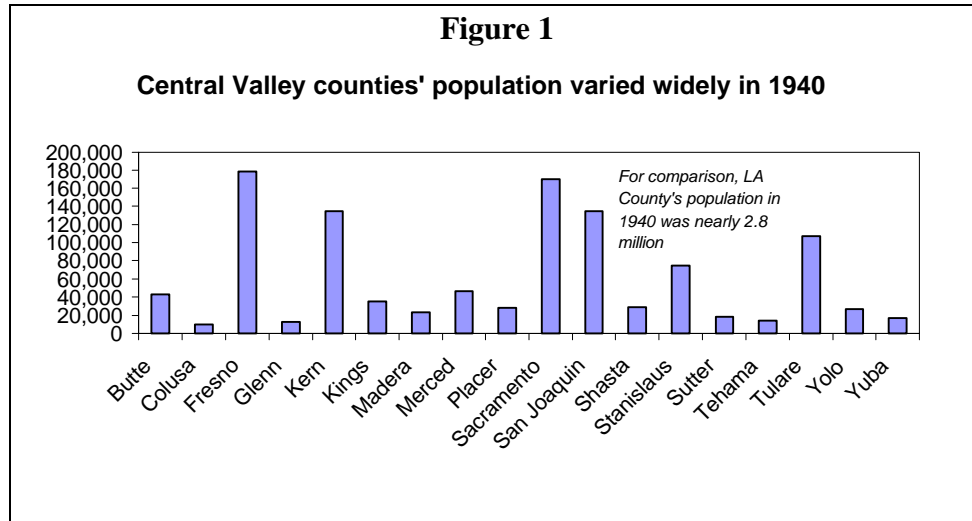
Geographically, the Central Valley may be subdivided into northern and southern portions. The northern part, the Sacramento Valley, encompasses ten counties, and the southern, or San Joaquin Valley, encompasses eight. Even these two sub-regions are large and internally diverse.

The entire area, as a valley, constitutes a single vast air basin, although specific issues vary with local terrain, climate, agriculture, population, and industry. For planning purposes, the Central Valley is divided into the Sacramento Valley Air Basin and the San Joaquin Valley Air Basin. Those basins generally correspond to the groups of counties used in this paper.

In terms of watersheds, the Central Valley is encompassed by the Sacramento River watershed, the San Joaquin River watershed, and the Tulare Lake watershed. The Sacramento River watershed stretches from roughly the northeast corner of California to Sacramento County. The San Joaquin Valley watershed encompasses the area from Sacramento County (including the southeast corner of the county itself) to Madera County (and portions of Fresno County). The Tulare Lake watershed includes most of Fresno

County, all of Kings and Tulare counties, and all but the eastern fifth or so of Kern County.

Figures 1 and 2, below, show populations for the Central Valley counties for 1940 and 1995. (Data not otherwise identified by source are from the California Department of Finance. The 1940 figures are Census data, and figures for other years are Department of Finance estimates for July 1 of the indicated year.) Notice the wide and continuing variations among county populations.



When looking at population growth rates since 1940, bear in mind the large initial differences among the counties. A high growth rate in a sparsely populated county adds few people, while a high growth rate in a highly populated county adds many.

All of the Central Valley counties have of course long been eclipsed in population by the urban centers of the state, especially Los Angeles and San Francisco. After decades of brisk growth, Sacramento County still has less than half the population *now* that Los

Angeles County had *in 1940*, nearly six full decades ago. The section entitled “Population Growth,” takes a closer look at growth rates.

### **The North, or Sacramento Valley**

We now turn to individual county profiles, generally in order from north to south. Population figures and other data cited in the county profiles below are Department of Finance estimates for January 1, 1997, as published in *California County Profiles*, February 1998.<sup>3</sup> County totals do not necessarily correspond exactly to city-plus-unincorporated figures because of rounding.

Notice the transition in farm products as we move south in our overview of the counties. Lumber is especially important in the north, moving then into rice country, then to a predominance of fruit and nut crops and tomatoes, and grapes, and in the south of the valley, finally, cotton becomes a major crop, but alongside large crops of grapes, citrus, and other products (but very little lumber). Varied microclimates and differing soil and water conditions, however, offer opportunities for multiple important crops in most counties.

#### ***Shasta***

Shasta County reaches into forested areas to the north of the valley. Its county seat, Redding, adjacent to the Sacramento River, could be considered the northern terminus of the Central Valley. The city of Redding, population 77,400, encompasses nearly half of the county’s 162,700 population. The next largest city is Shasta Lake, 9,200 population, followed by Anderson, 8,650. The county’s leading industry is lumber and wood products. About 42 percent of the land area in Shasta County is government-owned.<sup>4</sup> This is the highest percentage among all of the Central Valley counties except for Tulare (52 percent), but only slightly over Madera and Fresno, all of which extend well to the east of the valley proper.

#### ***Tehama***

Immediately south of Shasta County, Tehama County is lightly populated. The county has three incorporated cities, Red Bluff (population 13,000), Corning (6,125), and Tehama (420). The remaining 35,250 of the county’s 54,800 population are in unincorporated areas. The county’s leading industry is lumber and wood products. Western and eastern portions of the counties are in national forest land. As of 1992, more than half (53.8 percent) of the county’s land area was in farms producing prunes, walnuts,

almonds, milk, cattle and calves, olives, and other products.<sup>5</sup> Tehama is bordered on the south by the counties of Glenn and Butte.

### ***Glenn***

Glenn County is among the least populous in California. Its 26,800 people are divided among the cities of Willows (6,400) and Orland (5,675) and unincorporated areas (14,750). The county's leading industry is farming ("food and kindred products"), especially rice, dairy products, prunes, alfalfa hay, and cattle and calves. Rice is by far the dominant product, followed by dairy products and almonds. The western portion of the county is in the Mendocino National Forest. More than half of the county's land area (56.3 percent) was in farms as of 1992.

### ***Butte***

Butte County is the most populous of the Central Valley counties north of the Sacramento metropolitan area (although Shasta is only about 30,000 behind). The county's population of 199,100 encompasses several cities. Chico, at 50,100, is the largest, followed by Paradise (26,100), Oroville (12,500), Gridley (4,870), and Biggs (1,690). The majority of the county's population (103,900), however, is in unincorporated areas. The county hosts a campus of California State University at Chico. Leading industries include food and kindred products, lumber and wood products, and printing and publishing. More than two-fifths (43.1%) of the county's land area was in farms as of 1992, with almonds and rice being the leading products, followed by walnuts, prunes, and several other products.

### ***Colusa***

Colusa, one of California's least populous counties, is south of Glenn and west of Sutter. The county's population of 18,300 is distributed among the cities of Colusa (5,400), Williams (3,050) and unincorporated areas (9,825). Some 61.1 percent of the county's land area is in farms (1992 data), producing rice, tomatoes (for processing), and almonds, followed by wheat, rice seed, and several other products. The western portion of the county is in the Mendocino National Forest. Colusa's population growth rate has been modest since 1940 by comparison with most of the Central Valley, but was more typical of the region during the period 1980-95.

### ***Sutter***

North of Sacramento County, Sutter County has a population of 74,700, divided among Yuba City (34,050), Live Oak (5,350), and unincorporated areas (35,250). The county is predominantly agricultural, with more than

four-fifths (82.5 percent) of its land area in farms (1992 data), and food and kindred products as its leading industry. Prominent crops include rice, prunes, tomatoes, peaches, walnuts, melons, and others. Yuba City is adjacent to neighboring Yuba County's Marysville, and separated from the latter by the Feather River. (It is one of the small perplexities of California geography and place names that *Yuba City* is in *Sutter County*, not in Yuba County.) The Sutter Buttes rise dramatically from the plain northwest of Yuba City, forming a distinctive landmark in the area.

### ***Yuba***

North of Placer County and east of Sutter County, Yuba County has a population of 60,500. The county has two cities, Marysville (population 12,150, constrained by the Feather and Yuba rivers) and Wheatland (1,920), with the large majority of the population (46,450) in unincorporated areas, including Olivehurst and Linda. Yuba County is predominantly agricultural, with nearly three-fifths (58.2 percent) of its land area in farms (1992 data). Leading industries include lumber and wood products as well as food and kindred products. Crops include rice, prunes, peaches, cattle and calves, and walnuts.

### ***Placer***

Geographically, most of Placer County is in the Sierra Nevada mountain range, not in the valley. Much of Placer's population of 209,700, however, resides in and near Roseville (62,700), north of Sacramento County and of course within the Central Valley. Other cities in the county include Rocklin (27,650), Auburn (11,400), Lincoln (8,100), Loomis (5,975), and Colfax (1,450). The county's population is growing rapidly and its economic base is developing, with emphasis on electronics and other electrical equipment, now the county's leading industry, followed by lumber and wood products. Stone, clay, and glass products and industrial machinery and equipment are also significant. Although about 15 percent of the county's land area is in farms (1992 data), agriculture is of relatively minor importance to the county's economy now.

### ***Yolo***

Geographically, Yolo County falls into the Sacramento Valley, as the county is to the north and west of Sacramento County. However, the county also has an association with the San Joaquin Valley by way of the University of California at Davis, in Yolo County, closely involved with San Joaquin Valley agriculture. Yolo County is unique in any event, as home to the only University of California campus in the Central Valley. (Another Central Valley UC campus is planned for Merced County.) Yolo

County's residents are on average more affluent and better educated than most of the Central Valley counties because of the presence of the University of California campus there.

Unlike many Central Valley counties, Yolo County has the large majority (about 86 percent) of its population of 152,100 in incorporated cities. These are Davis (53,400), Woodland (44,150), West Sacramento (30,400), and Winters (5,250). The remaining 21,300 county residents are in unincorporated areas. Yolo's land area is predominantly (80.1 percent) in farms (1992 data), and its leading industry is food and kindred products, followed distantly by lumber and wood products, paper and allied products, and printing and publishing. The leading agricultural product in the county (by far) is tomatoes, although the county also produces a variety of other crops, including seed crops, rice, field corn, alfalfa hay, and others. State and local government account for about 28 percent of the employed civilian population (1996 figures).

### ***Sacramento***

Sacramento County is unusual in that it is home to the Legislature, Governor's Office, and a host of departments and agencies. One-quarter of the county's employed residents work for state and local government (1996 data). Sacramento is home to a campus of the California State University.

The county is also distinctive among Central Valley counties by virtue of its population, which at 1,140,600 makes it the largest in the valley, and its density of population, which at some 1,200 per square mile far exceeds any other in the valley.<sup>6</sup> Leading industries in the county include food and kindred products, printing and publishing, electronic and other electric equipment, and fabricated metal products. Despite the county's density of population, 61.3 percent of its land area is in farms (1992 data), producing milk, wine grapes, bartlett pears, field corn, tomatoes, turkeys, and other products.

The county's population as of January 1, 1997, was encompassed in the cities of Sacramento (388,700), Folsom (43,300), Galt (15,950), Isleton (840) and unincorporated areas (691,800). The incorporation of the City of Citrus Heights, effective in January 1997 and not yet reflected in the *California County Profiles* figures, shifted roughly 82,000 of the county's population out of the unincorporated column, reducing that figure to about 609,000.



## **The South, or San Joaquin Valley**

As above, here are individual county profiles, generally in north to south order, and population data are Department of Finance estimates for January 1, 1997. County totals do not necessarily match the sums of other figures within counties exactly, as a result of rounding.

### ***San Joaquin***

Immediately south of Sacramento County, San Joaquin County is in the heart of the agricultural Central Valley, with an astonishing 87.5 percent of its land area in farms (1992 data). What makes this figure surprising is that at the same time the county has a population of over half a million (535,400, January 1, 1997 estimate). Most of the county's population is in incorporated cities: Stockton (236,500), Lodi (54,800), Tracy (46,050), Manteca (45,950), Ripon (9,275), Lathrop (8,950), and Escalon (5,350). The remaining 128,500 are in unincorporated areas.

San Joaquin County's leading industry is, not surprisingly, food and kindred products, far outdistancing stone, clay and glass products; lumber and wood products; fabricated metal products; and several others (based on 1992 data). Leading agricultural commodities in the county are grapes and milk, followed at a distance by almonds, tomatoes, asparagus, walnuts, cherries, hay, apples, and "woody ornaments." The county is increasingly serving as a bedroom community for Bay Area and Silicon Valley workers as a result of its less costly homes.<sup>7</sup>

### ***Stanislaus***

Immediately south of San Joaquin County, Stanislaus County is also predominantly farmland (79.4 percent, according to 1992 data), but also has a substantial population of 415,300. Cities in the county are Modesto (178,700), Turlock (49,200), Ceres (31,100), Oakdale (14,300), Riverbank (13,350), Patterson (9,600), Waterford (6,375), Newman (5,750), and Hughson (3,530). The remaining 103,400 residents are in unincorporated areas. Modesto is home to the Great Valley Center, an organization founded in 1997 focusing on the interests of the Central Valley as a whole. The leading industry in the county is food and kindred products, far outdistancing paper and allied products, fabricated metal products, and others. The county's main agricultural products include milk, almonds, chickens, chicken eggs, turkeys, grapes, walnuts, cattle and calves, tomatoes, and peaches. The county is home to California State University, Stanislaus, in Turlock.

## *Merced*

Another predominantly farmland county (79.2 percent of land in farms, according to 1992 data), Merced County is immediately south of Stanislaus and, like Stanislaus, firmly in the center of the Great Central Valley. The county's population of 201,000 is distributed among several cities: Merced (61,400), Atwater (21,350), Los Banos (20,700), Livingston (10,500), Dos Palos (4,410), and Gustine (4,140). The remaining 78,500 residents are in unincorporated areas. As is typical in the Central Valley counties, Merced's leading industry is food and kindred products. Chief products include milk (the clear leader), almonds, chickens, cotton, alfalfa, tomatoes, sweet potatoes, turkeys, eggs, and cattle. A new University of California campus is being planned for Merced County, with an anticipated opening date of 2005.

## *Madera*

Although Madera County falls in the Central Valley, sandwiched in part between Merced and Fresno, it also reaches east, well into the Sierra National Forest and Yosemite National Park. The county's 111,600 people are distributed among the City of Madera (35,500), City of Chowchilla (12,700), and unincorporated areas (63,400). Over half (54.8 percent) of the county's land area was in farms as of 1992. Leading industries include food and kindred products; stone, clay, and glass products; and industrial machinery and equipment (based on 1992 data). Primary agricultural products include almonds, grapes (raisin and wine varieties), milk, pistachios, cotton, alfalfa hay, turkeys, and apples.

## *Fresno*

Large both in land area and population, Fresno County, like Madera, stretches well to the east of the valley and into the Sequoia National Park. About 40 percent of the land in Fresno County, mostly in foothill and mountain areas, is owned by government, predominantly the federal government. (Madera has a comparable percentage, and Tulare an even higher one.) The City of Fresno (406,900) encompasses more than half of the county's 776,200 population. The rest of the county's residents are distributed among 14 other incorporated cities (Clovis, at 66,500, by far the largest of them, and San Joaquin at 2,980, the smallest), and unincorporated areas (176,900). The other incorporated cities of Fresno county, whose distinctive names are so recognizable to those who frequently travel through the Central Valley, are: Reedley (19,550), Sanger (18,600), Selma (17,700), Parlier (10,400), Coalinga (10,250), Kingsburg (8,750), Orange Cove (7,750), Mendota (7,450), Kerman (7,175), Firebaugh (6,000), Huron (5,600), and Fowler (3,790).

Leading industries include food and kindred products (far in front); industrial machinery and equipment; printing and publishing; and stone, clay, and glass products. Primary agricultural products include grapes, cotton, poultry, tomatoes, milk, almonds, peaches, garlic, cattle and calves, and nectarines. Fresno is the most productive agricultural county in the state and in the nation. (In 1992, Monterey, Tulare, and Kern were the second, third, and fourth in the nation, while San Joaquin was sixth, Merced eighth, and Riverside ninth. Of these, only Monterey and Riverside are not in the San Joaquin Valley.<sup>8</sup>) Fresno County is also home to a California State University campus.

### *Kings*

Rivaling San Joaquin County in this statistic, Kings County has 87.2 percent of its land area in farms (1992 data). Kings is tucked between Fresno, Tulare, and Kern counties, with a small western border along the east side of coastal Monterey County. The county's leading industry is, of course, food and kindred products. The dominant agricultural products are milk and cotton, followed distantly by cattle and calves, turkeys, alfalfa hay, grapes, wheat, peaches, tomatoes, and walnuts. Kings County's population of 118,200 is distributed among the cities of Hanford (38,900), Lemoore (16,800), Corcoran (14,350), Avenal (12,350), and unincorporated areas (35,850).

### *Tulare*

Tulare County, immediately to the east of Kings, stretches into the Sequoia National Forest and Inyo National Forest. A majority of the county's land area (52 percent, mostly in foothill and mountain areas) is owned by government, predominantly the federal government, the highest percentage among the Central Valley counties. The county's population of 355,500 resides in the cities of Visalia (92,500), Tulare (40,350), Porterville (35,450), Dinuba (15,000), Lindsay (8,900), Exeter (8,200), Farmersville (7,350), and Woodlake (6,175), with the other 140,800 in unincorporated areas. The leading industry is food and kindred products, followed distantly by printing and publishing, lumber and wood products, fabricated metal products, and electronic and other electric equipment (1992 data). Agricultural products include milk, grapes, oranges, cattle and calves, cotton lint and seed, and others. Tulare County is one of the most productive agricultural counties in California, in terms of value of production, second only to Fresno.

## ***Kern***

At the south end of the Central Valley, Kern County is immediately north of Ventura and Los Angeles counties, and south of Kings and Tulare counties. Mountain ranges, including the Tehachapi Mountains, mark the southern end of the Central Valley, south and east of Bakersfield.<sup>9</sup> The county's population of 628,200 resides in the City of Bakersfield (214,600) and ten much smaller cities (Delano being the largest, with 32,350 residents, and Maricopa the smallest, with 1,230), with 280,600 in unincorporated areas. The other cities in Kern County are Ridgecrest (28,700), Wasco (18,850), Shafter (11,000), Arvin (10,950), California City (8,750), McFarland (8,025), and Tehachapi (6,500).

Again, food and kindred products constitute the county's leading industry, followed by a substantial segment of chemicals and allied products, and more distantly by rubber and miscellaneous plastics products and by printing and publishing. The County's large and varied agriculture (third among California counties in 1996) includes grapes, cotton/cottonseed, almonds and byproducts, citrus, milk, potatoes, carrots, cattle and calves, nursery crops, and alfalfa hay. More than half of the county's land area (54.5 percent) is in farms (1992 data). The county is also known for its oil fields and is home to California State University, Bakersfield.

The City of Bakersfield is about as far from Los Angeles as it is from Fresno, although the trip to Los Angeles goes through mountain ranges and that to Fresno is over flat valley land.

### **If the San Joaquin Valley were a State . . .**

In May of 1996, the California Research Bureau released a report comparing the San Joaquin Valley to other states.<sup>10</sup> Following are a few of the comparisons laid out in that report (reflecting 1990 Census data). Please note that these figures pertain only to the eight counties of *the San Joaquin Valley*, extending from San Joaquin County to Kern County, not to the entire 18-county Great Central Valley we have been looking at here.

- The San Joaquin Valley is larger in area than ten states.
- The San Joaquin Valley ranked 31st in population, exceeding 20 states.
- The San Joaquin Valley ranked ninth in population growth.
- The San Joaquin Valley ranks eighth in population of Asian ancestry (and second, following only California itself, in population of Cambodian, Hmong, and Laotian origin).

- The San Joaquin Valley ranks sixth in Hispanic population (following the states of California, Florida, Illinois, New York, and Texas).
- The San Joaquin Valley ranks third in persons of Mexican origin or descent, after only California and Texas.
- The San Joaquin Valley ranks fortieth in per capita household income, between South Carolina and Alabama.
- The San Joaquin Valley ranks fourth in the number of persons involved in farming, forestry, and fishing, surpassed only by California, Florida, and Texas.

These figures help to underline the diverse population and the important role of agriculture in the San Joaquin Valley, factors that apply equally well to the even more diverse Central Valley as a whole.

# Population Growth

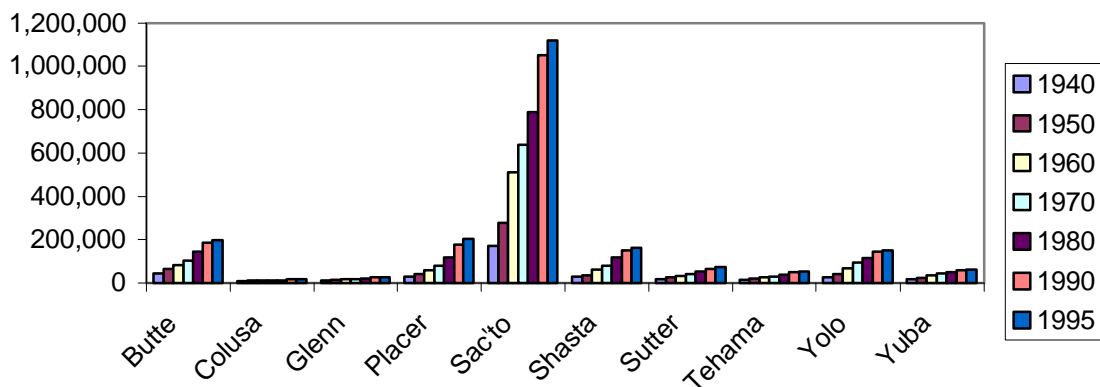
The Central Valley's population has grown substantially in recent decades. In percentage terms, the Central Valley grew faster than the state as a whole from 1980 to 1995.<sup>11</sup>

## World War II and After

The charts below illustrate the patterns for the northern and southern valley counties from 1940 to 1995.

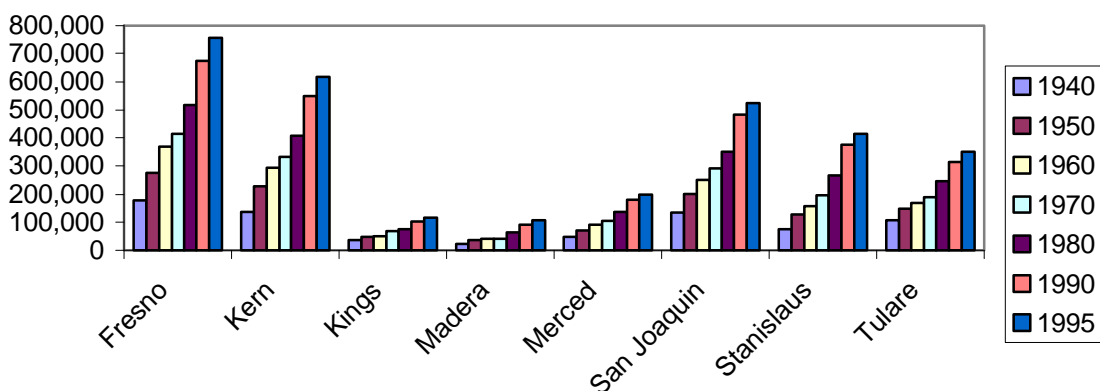
**Figure 3**

### Sacramento Valley Counties have grown steadily, 1940-95



**Figure 4**

### San Joaquin Valley counties have grown steadily, 1940-95

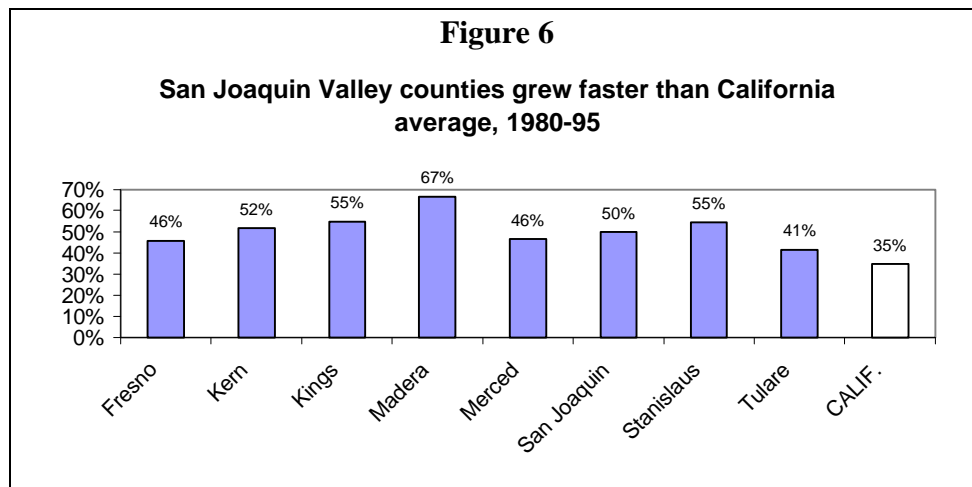
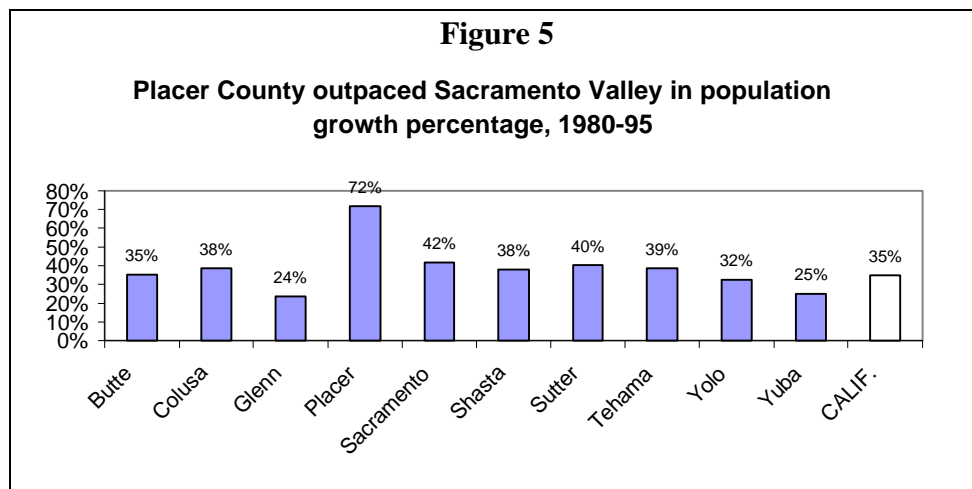


Sparsely populated Colusa and Glenn counties showed relatively modest growth rates, but even there population growth of 82 percent and 118 percent, respectively, was observed over the period.

Although rates have varied from one county to another, and of course the populations from which each began in 1940 differed widely, the general trend of growth may be seen in every county.

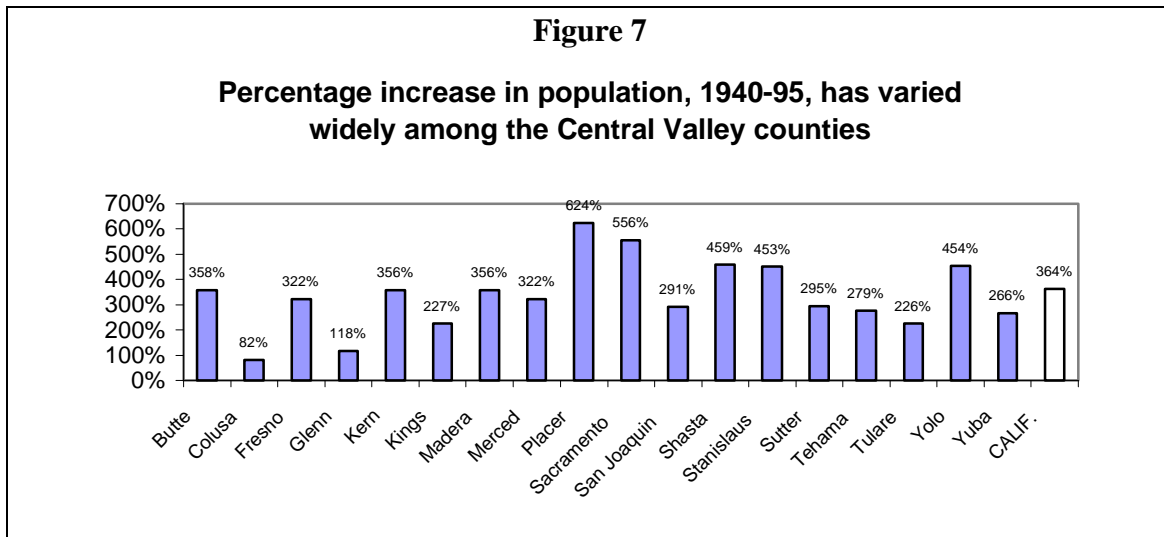
### The 1980s and 1990s

Turning to the 1980 to 1995 period:

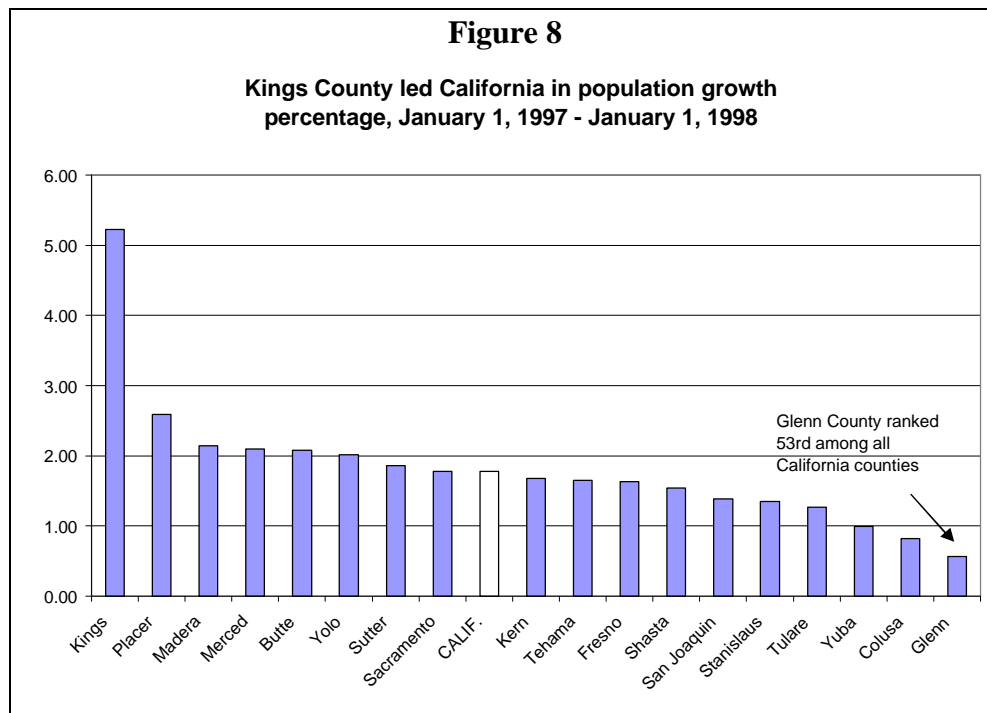


Most of the Central Valley counties, especially in the north, have outpaced the already significant statewide population growth rate in the 1980s and early 1990s.

In summary, patterns of percentage increase for 1940-95 varied widely among the counties, as shown below for all of the Central Valley counties and the state as a whole, but in all cases there has been growth.



Finally, for this section, a quick look at the California Department of Finance's estimates of population change for 1997-98. For comparison with the county figures, California's population grew by an estimated 1.8 percent between January 1, 1997, and January 1, 1998. Details of the estimates and much more information may be found at the Department of Finance's Web site, <http://www.dof.ca.gov>.





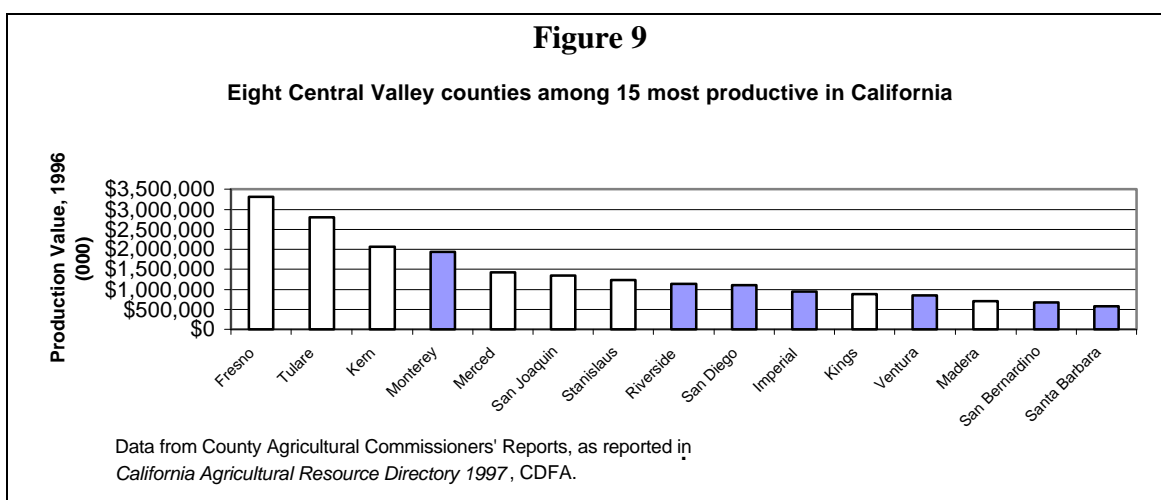
To put growth rates in perspective, the population increase in Los Angeles County from January 1, 1997, to January 1, 1998, (an estimated increase of 132,400), exceeded the *entire* January 1, 1997, population of Kings County by 15,700. To take its leading place in percentage growth among California counties during that year, Kings County added 6,100 residents, climbing from 116,700 to 122,800.<sup>12</sup>

## Agriculture-Oriented Economy

California is known across the nation and around the world for the variety and productivity of its agriculture. Many of the most productive of California's agricultural counties are in the Central Valley, most notably in the San Joaquin Valley. At the same time, 15 of the valley's 18 counties are among the 25 most productive of the state's agricultural counties. The three not included are Placer, Yuba, and Shasta.

### The Central Valley in California Agriculture

Figure 8 shows the prominence of Central Valley counties in California's agriculture. Each of the 15 counties shown, including all eight in the San Joaquin Valley, had over a half billion dollars total agricultural production in 1996. The figures exclude timber.

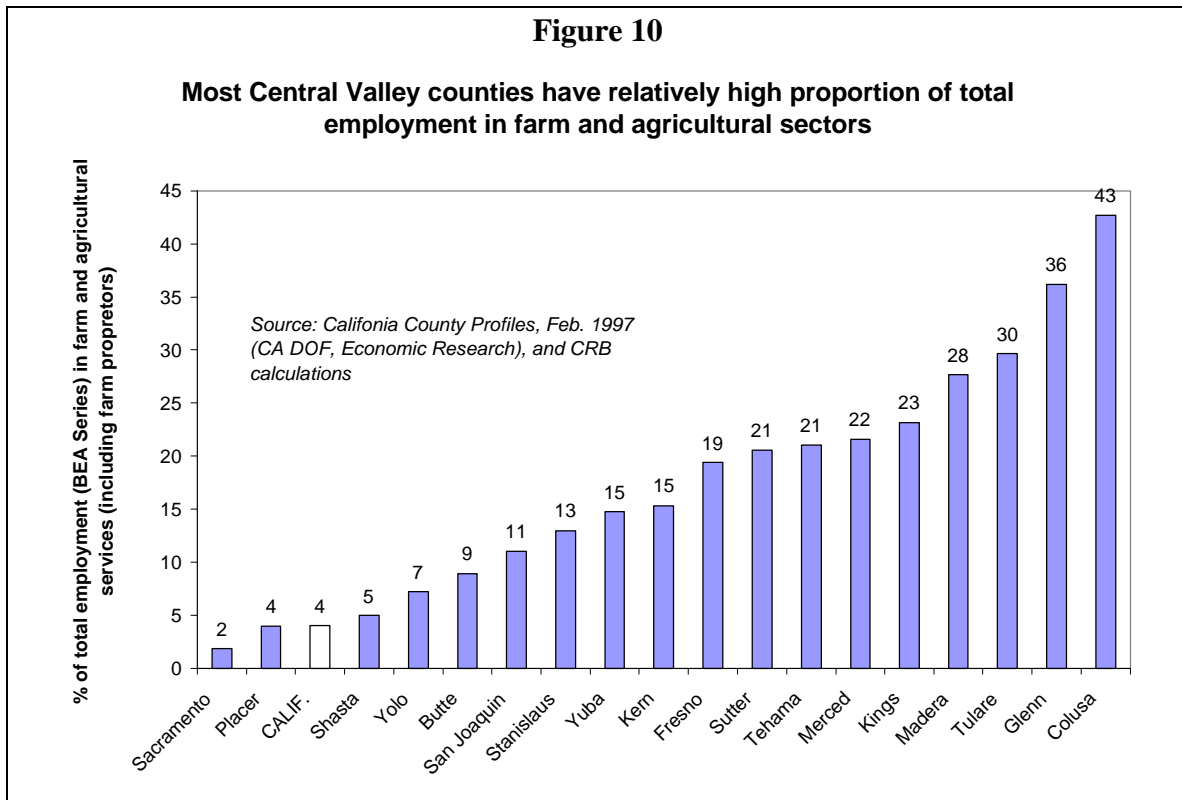


Central Valley agriculture even withstood a six-year drought, 1987-92, although not without difficulty.<sup>13</sup>

In 1998, water deliveries from the Central Valley Project are expected to be at full contracted level, in view of a relatively wet winter and spring and a good snowpack in the Sierra Nevada range. Some areas suffered damage from flooding in 1997-8, in part due to "El Niño," after already suffering from flooding – some of it very severe – in 1996-7. Flooding has led to some ongoing problems, such as damage to fruit and nut trees. A July 1998 report cited estimated statewide weather-related damage to agriculture of over \$422 million for the season. That figure included \$96 million in San Joaquin, \$83 million in Kings, \$55 million in Tulare, and lesser amounts in many other counties.<sup>14</sup> This year's damage from rain, wind, and flooding is only the latest in a series of weather-related challenges in recent years. Plainly, weather is a matter of great importance to the Central Valley.

## Agricultural Employment

Figure 9 shows a rough but interesting statistic comparing agricultural employment among the Central Valley counties and in comparison to the state as a whole. The charts reflect 1994 data (Bureau of Economic Analysis, BEA), as reproduced in the 1997 *California County Profiles*. That series was dropped from the 1998 edition of the *County Profiles* for technical reasons.

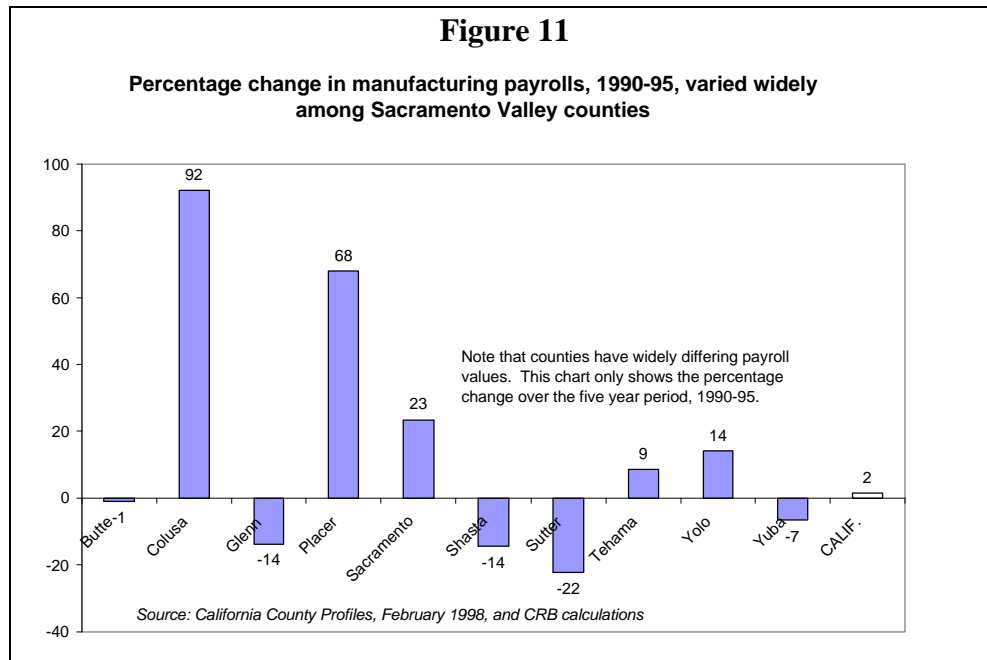


Overall for the 18 counties, about 12.3 percent of jobs are related to agriculture (1994 BEA Series data as shown in chart above). The figure is 16 percent for the counties other than Sacramento, which is both the largest of the 18 and has the lowest proportion of jobs in agriculture.

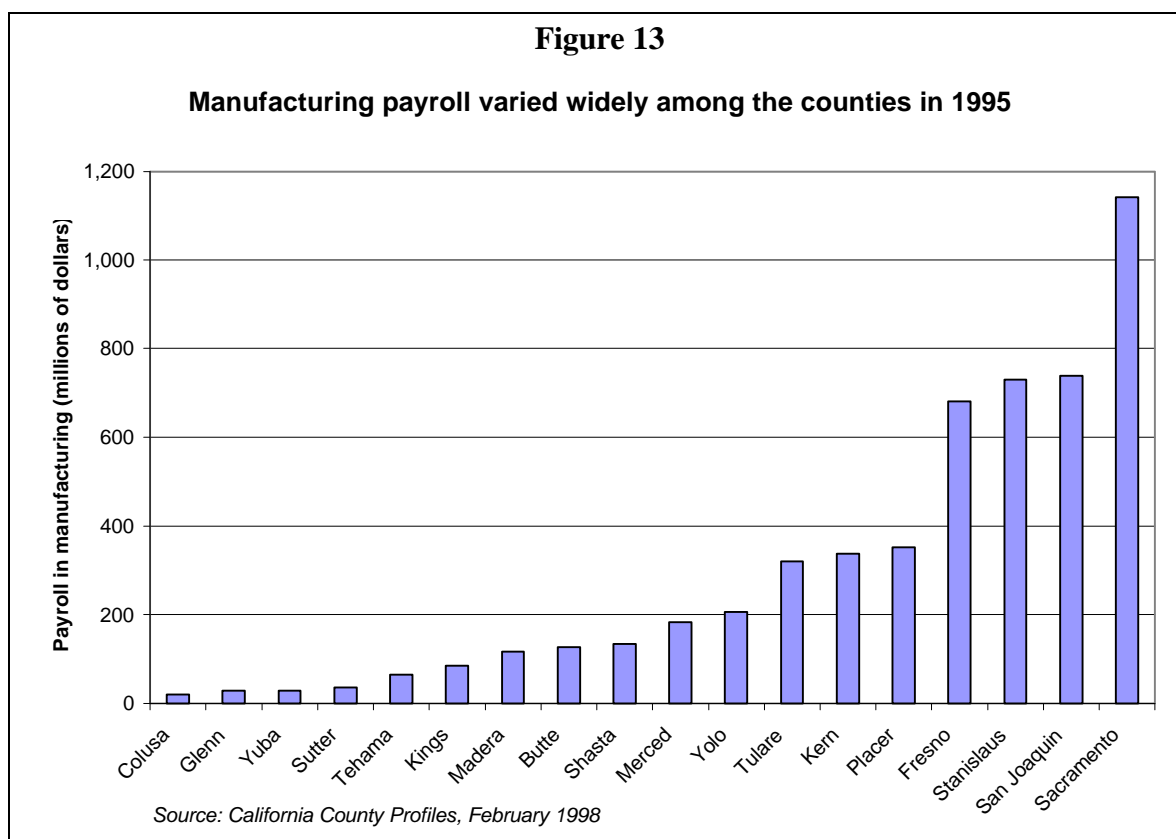
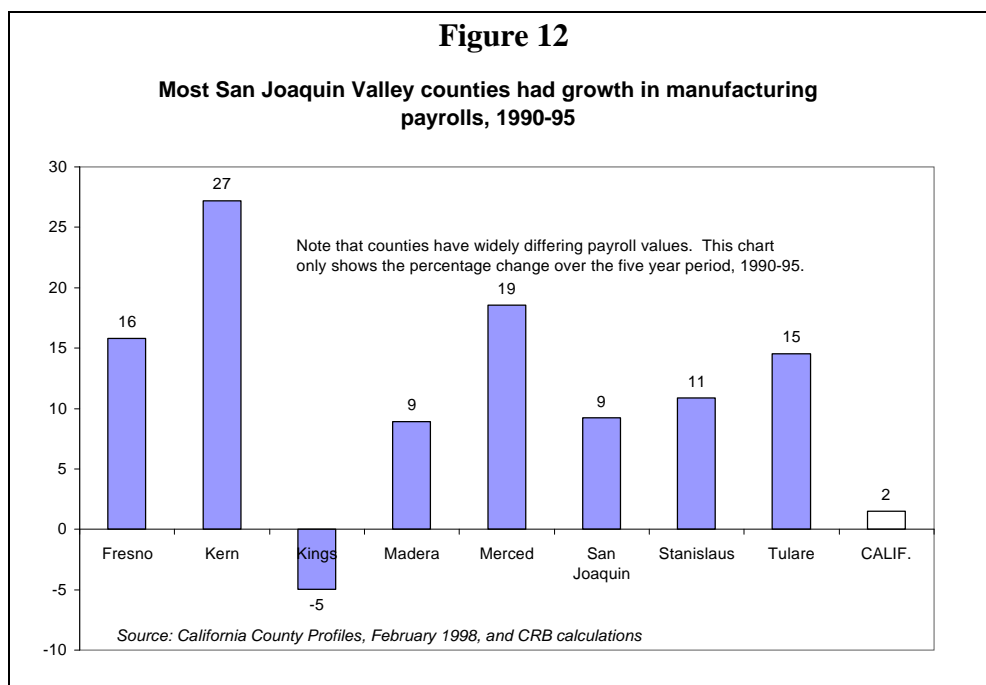
The *total* proportion of Central Valley jobs in some way dependent on agriculture is even higher than these figures suggest, as the total figure includes jobs *indirectly* generated by the agricultural sector (the “multiplier effect”). Those jobs serve the needs of people directly employed in the farm and agricultural services sector.

## Manufacturing Payrolls

Although the Central Valley's economy is heavily involved with agriculture, there are many manufacturing establishments throughout the area. The following two charts show the percentage change in total payroll dollars paid to workers in manufacturing in the Sacramento and San Joaquin Valley counties during the five-year period 1990-95. The figures are not adjusted for inflation.



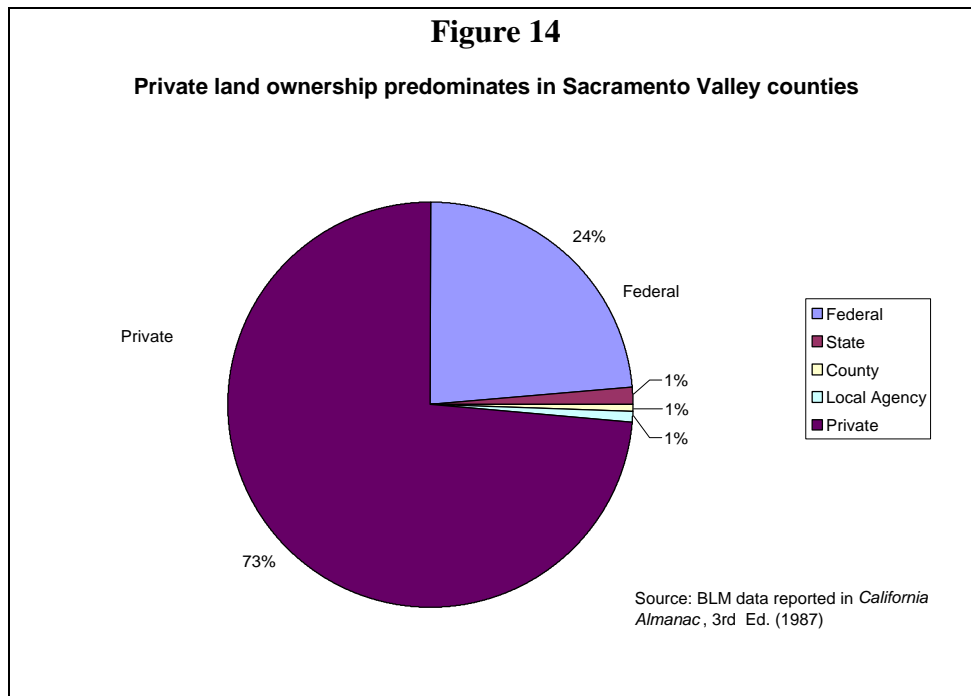
While most counties showed growth, some did not. The largest increase, 92 percent, was in Colusa County, which began and ended the period with the smallest manufacturing payroll.



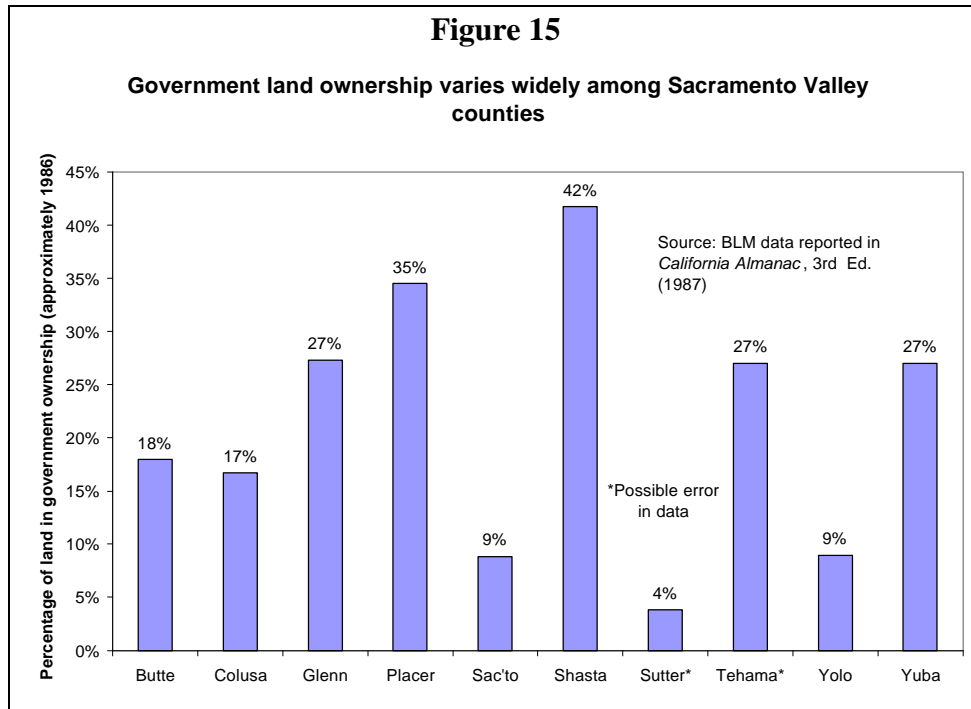
Manufacturing payrolls correlate only loosely with populations. Some counties, including Placer, Stanislaus, and San Joaquin, have disproportionately high figures on this measure. Sacramento, the most populous of the Central Valley counties, also has the highest manufacturing payroll. At the same time, as shown in a previous chart, it has the lowest dependence on agriculture-related employment.

## Private Land Ownership Predominates

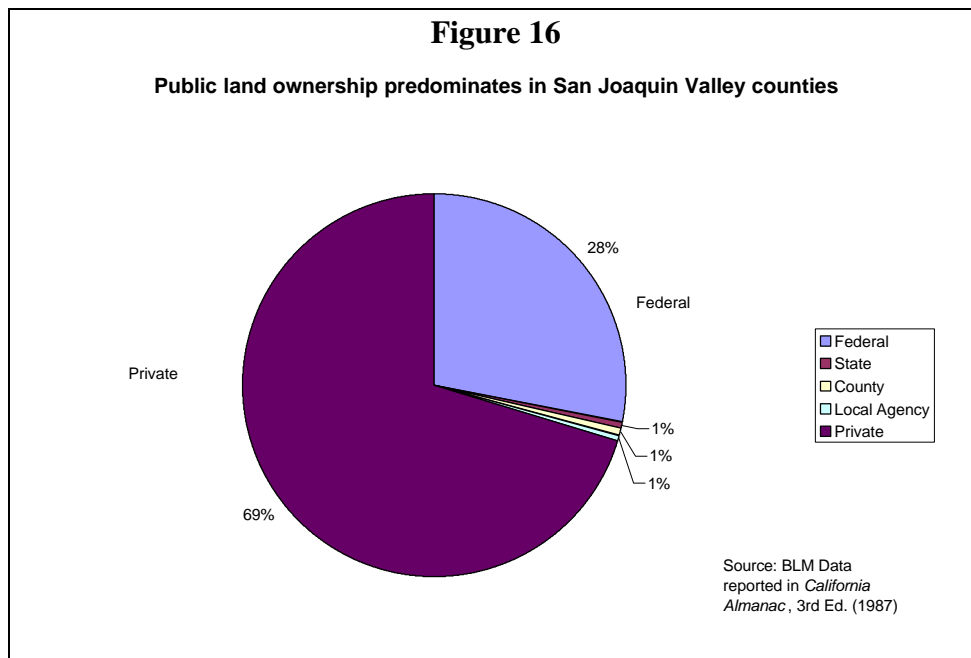
About half of California's land area is owned by government, especially the Federal Government (1987 figures). Federal land is predominantly in national forests, parks, and rangelands. Most Central Valley counties have relatively little government-owned land, except for some counties that extend into mountain and forest areas. Land on the valley floor is predominantly farmland and is almost entirely in private ownership. Most of the government-owned land in the Central Valley counties is foothill and mountain areas, and much of it extends into the Sierra Nevada range.



Individual county patterns vary. A glance at the map of the Central Valley counties shows why: some counties reach far into forest and foothill areas while others are confined almost entirely to the valley proper.



A broadly similar pattern may be seen in the San Joaquin Valley counties as in the Sacramento Valley counties.

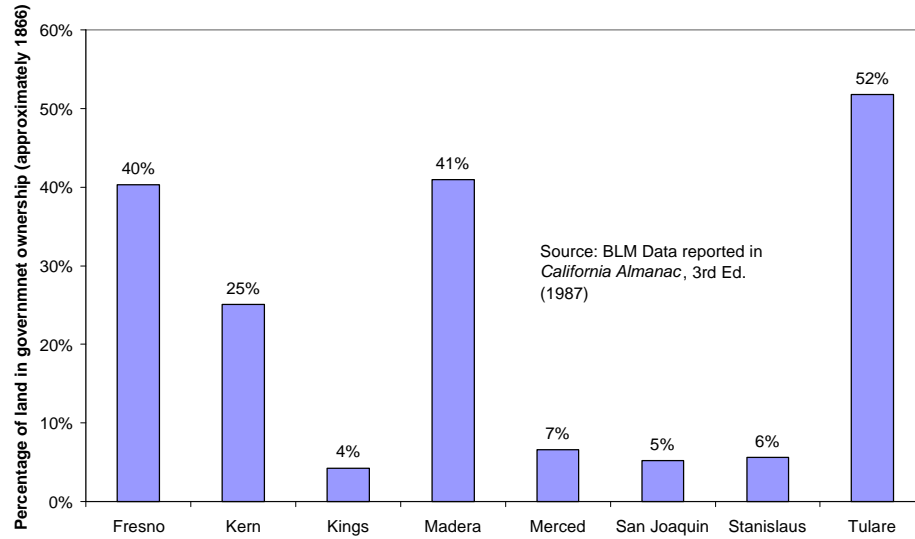


As in the north, ownership patterns vary among the San Joaquin Valley counties. Counties with relatively high levels of government-owned lands are those that extend into the foothills and mountains. The counties that are entirely on the valley floor have little government-owned land.



**Figure 17**

**Government land ownership varies widely among San Joaquin Valley counties**

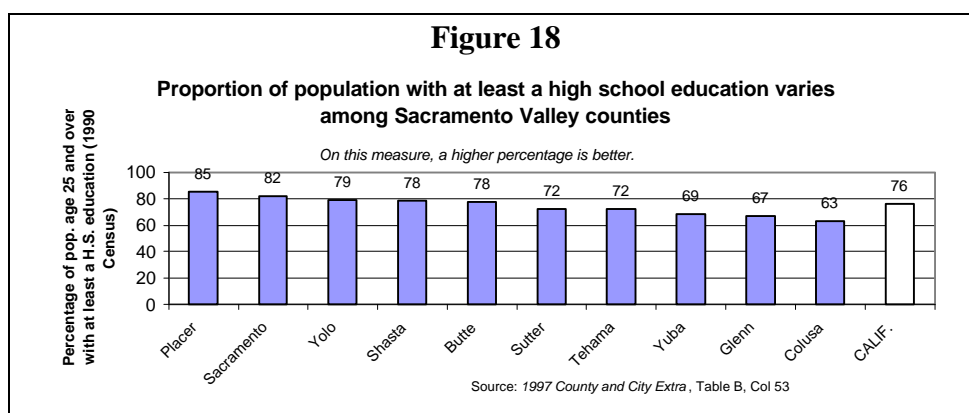


# Education

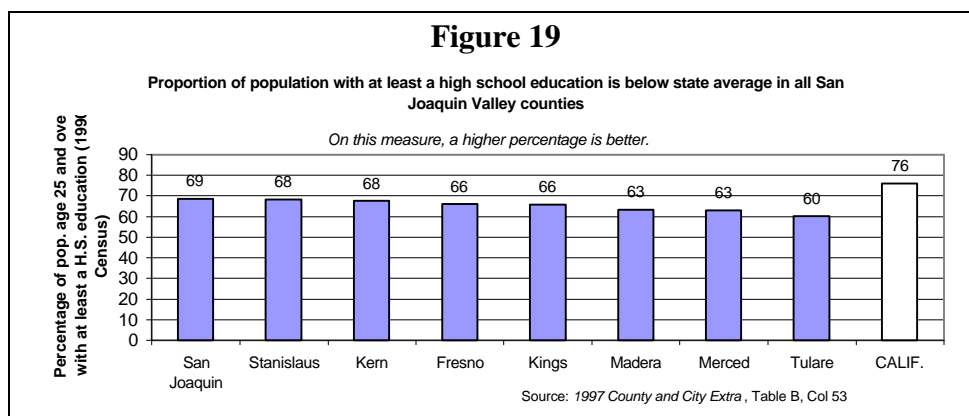
In general, statistics for the Central Valley counties reflect lower average educational attainment than for California as a whole.<sup>15</sup> This is reflected in several measures, including high school completion, possession of a bachelor's degree, rate of taking the Scholastic Assessment Test (SAT), and enrollment of graduating high school seniors as college freshmen the following fall.<sup>16</sup>

## High School Education

Placer and Sacramento counties have a significantly higher rate of adult population with a high school education than the state as a whole, although Yolo, Shasta and Butte also perform better than the state average.

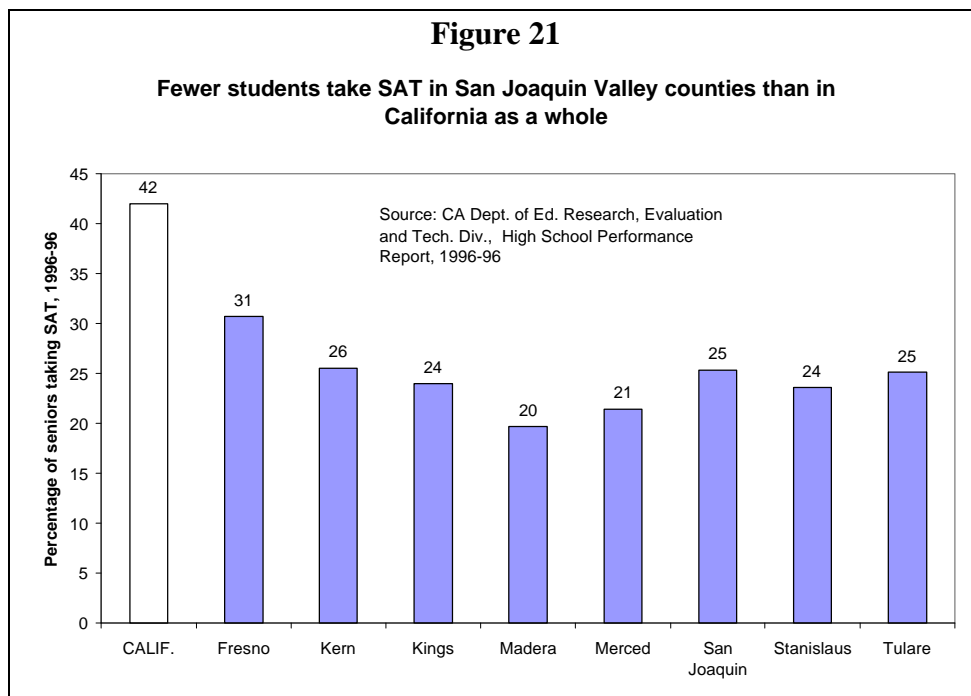
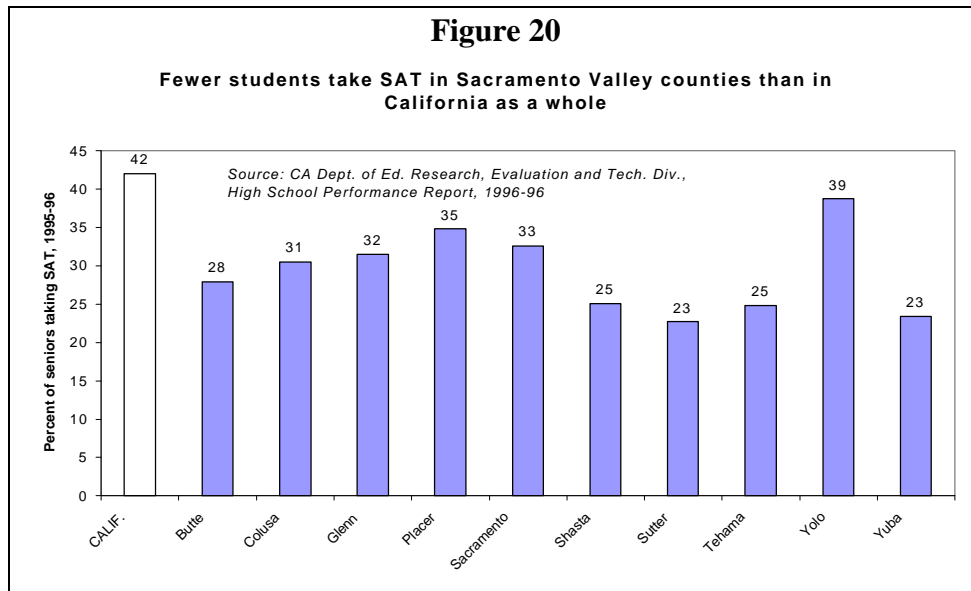


Among the counties in the San Joaquin Valley, none has a higher rate of adults with at least a high school education than the state average. All of the counties in that group fall below the state average, and generally far below.



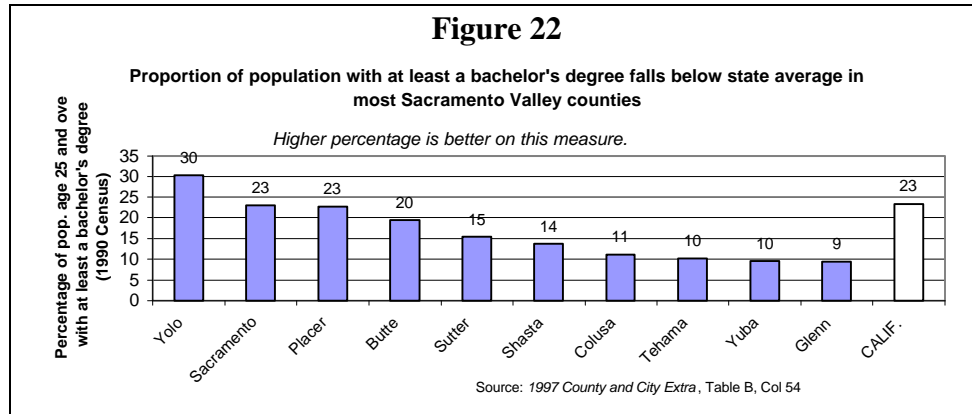
## College Bound: Percentage Taking the SAT

A higher rate of taking the SAT (Scholastic Assessment Test, formerly known as the Scholastic Aptitude Test) is, in general, related to a higher rate of preparation to attend a four-year college among high school students.<sup>17</sup> Central Valley counties vary widely on this measure, but in all cases fell below the state average for 1995 (though by only three percentage points in Yolo County).

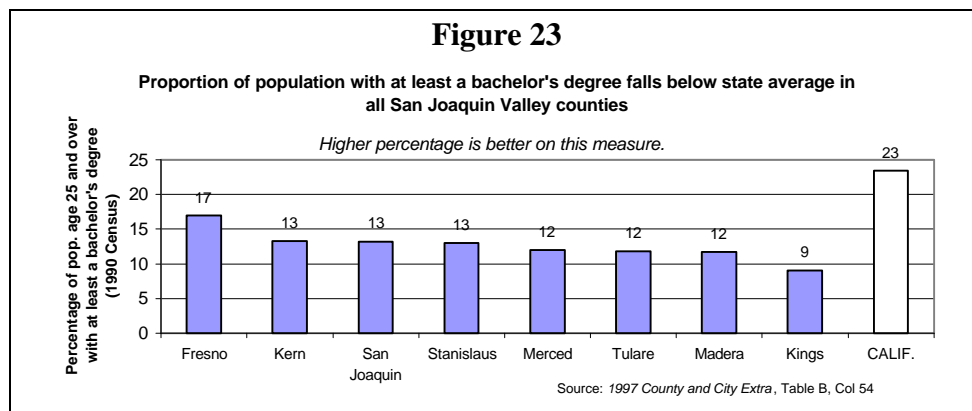


## College Education

Only Yolo County shows a higher level of population with a bachelor's degree than does the state as a whole, although Sacramento and Placer are very close to the state average.<sup>18</sup>



Yolo County is of course home of the University of California campus at Davis. Sacramento County is home to State government, and Placer is relatively prosperous and becoming a technology center. These counties rank relatively high on other measures of educational attainment shown above as well.

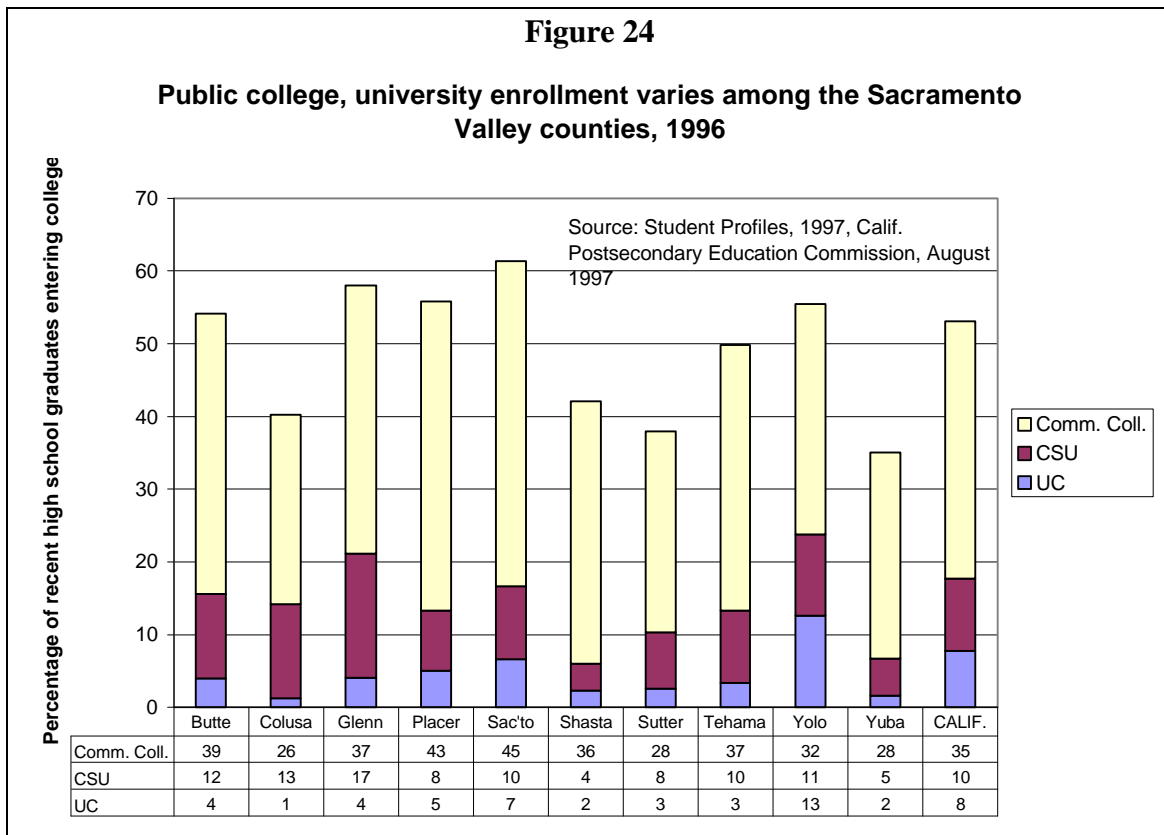


College enrollment figures have varied from year to year in many counties, sometimes sharply, and in the state as a whole over the last decade. Statewide year-to-year variations are, of course, less pronounced than variations in some counties. Many counties have seen a decline in the percentage of high school graduates who go on immediately to college, enrolling as freshmen in the fall, although some have seen increases.

Taking 1996 as a snapshot comparison, some Central Valley counties fall below the state average in the proportion of graduating high school seniors going directly on to public colleges and universities. Community colleges make up some of the shortfall that is seen in UC and CSU enrollment.<sup>19</sup> Some Central Valley counties exceed the state average on this measure, and some are very close to the statewide figure. The figures cited here

exclude those students who enter private colleges, a small proportion of the total, typically in the one to two percent range (but substantially higher in a few counties within California).

The figures in the charts below do not consider later transfers from community college to UC and CSU, nor enrollment in college after some period following high school graduation.



Among the more prominent year-to-year changes is a jump of nearly 20 percentage points (from 39.1 to 58.1) in Glenn County high school graduates going on to public colleges. There was also a jump, from 0.3 percent to 1.6 percent, in the number of graduates going on to independent institutions. As Glenn County had only 315 high school graduates in 1996, the figures' volatility reflects small numbers. Nonetheless, the increase is striking.

Fresno County (followed closely by Sacramento and, for 1996 by Glenn) leads the Central Valley counties in total proportion of high school graduates moving immediately into public higher education.

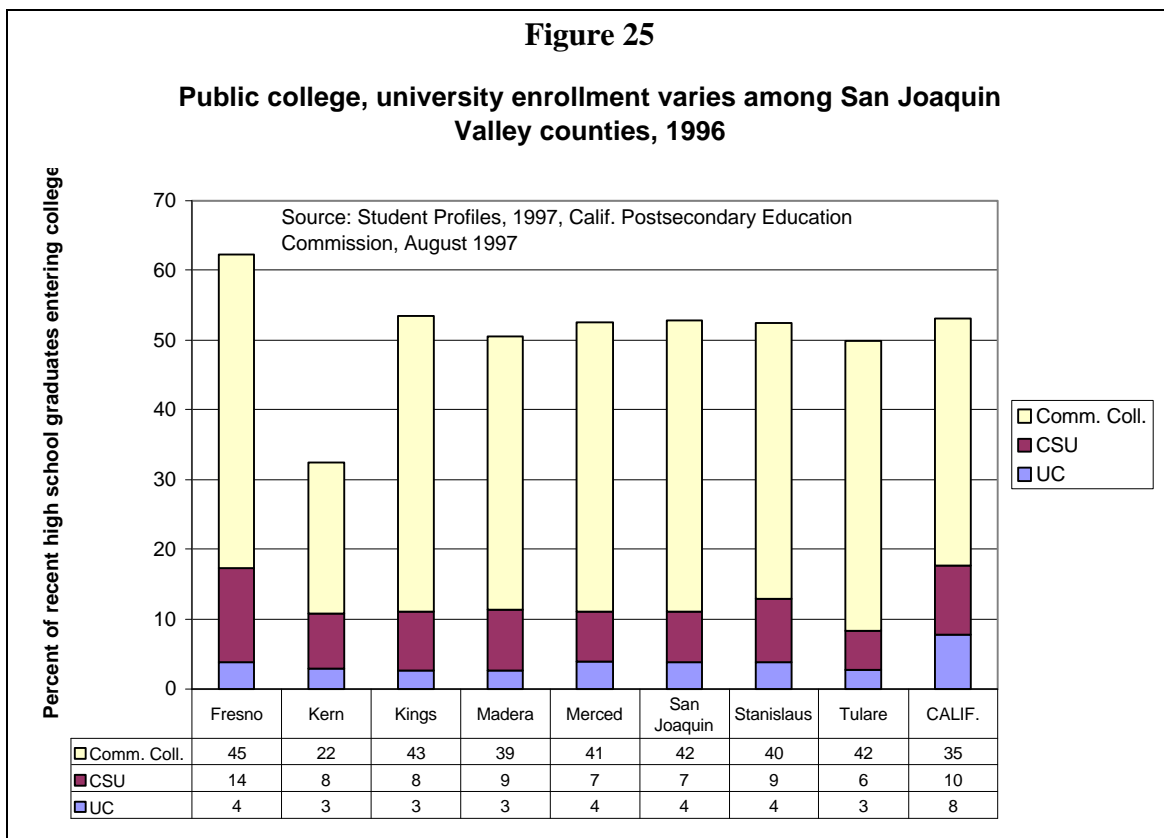
Kern County, at 32.4 percent, is below the rest of the Central Valley on this measure for 1996; its figure is down from 36.7 percent for 1995 and down sharply from the recent peak year, 1990, with 53.0 percent. In view of the volatility of this statistic, caution is appropriate in interpreting it. It is also important to remember that some high school

graduates might go on to college after a delay of a year or more, and those graduates would not be reflected in this measure.

As these charts show, community colleges are an important part of the higher education picture in all of the Central Valley counties and in the state as a whole.

In addition to students who go on to attend public colleges and universities, about one to four percent enter independent institutions. Those figures vary widely from year to year and from county to county. Statewide for 1996 the figure was 2.3 percent, according to California Postsecondary Education Commission data (Student Profiles 1997, 6-1).

The new University of California campus, planned for Merced County, will change patterns of college attendance in the Central Valley both by offering a closer alternative and by expanding educational resources in the area.



A report issued by a UC faculty committee noted:

The new University of California campus in Merced will be a major research university and a world center of electronic technologies and will explore the rich cultures of the San Joaquin Valley.

The new campus will also have a unique interdisciplinary academic structure built around three divisions, rather than traditional schools and colleges.<sup>20</sup>

It is anticipated that the new campus will open in the year 2005.

At this time, the Central Valley has 5 California State University campuses and 12 community college districts. Each of the districts encompasses one or more community colleges.

#### *CALIFORNIA STATE UNIVERSITY CAMPUSES*

In alphabetical order, the CSU campuses in the Central Valley are:

- California State University, Bakersfield
- California State University, Chico
- California State University, Fresno
- California State University, Sacramento
- California State University, Stanislaus

#### *COMMUNITY COLLEGE DISTRICTS*

In alphabetical order, the community college districts serving the Central valley are:

- Butte-Glenn Community College District (Oroville)
- Kern Community College District (Bakersfield)
- Los Rios Community College District (Sacramento)
- Merced Community College District (Merced)
- San Joaquin Delta Community College District (Stockton)
- Sequoias Community College District (Visalia)
- Shasta-Tehama-Trinity Community College District (Redding)
- Sierra Joint Community College District (Rocklin, Placer County)
- State Center Community College District (Fresno)
- West Kern Community College District (Taft)
- Yosemite Community College District (Modesto)
- Yuba Community College District (Marysville)

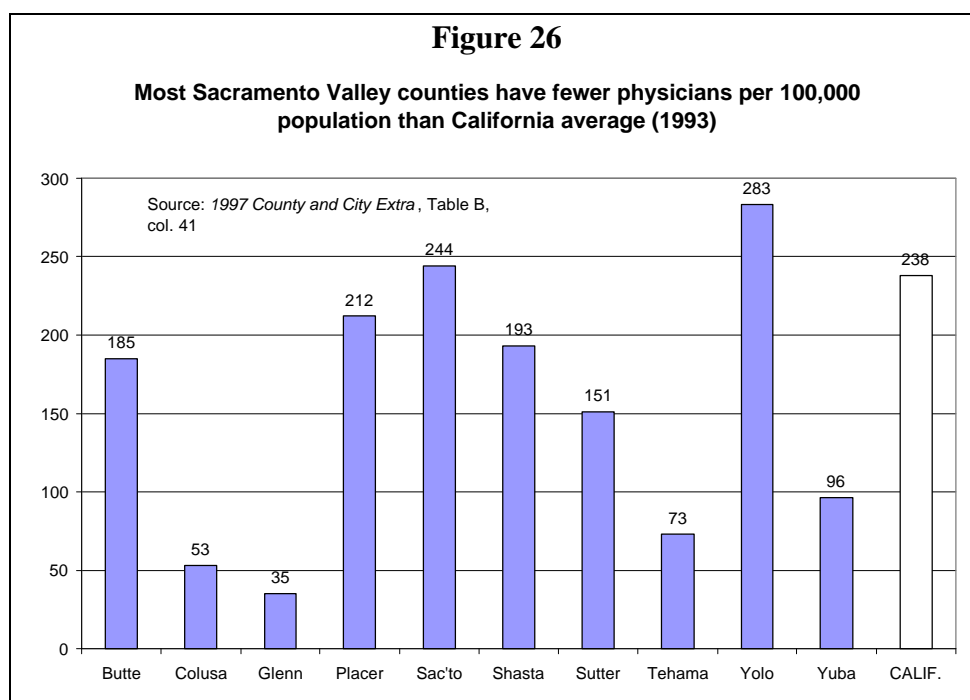
The city in which the district headquarters (or campus, where there is only one) is located is shown in parentheses. Among them, the 12 districts encompass 18 separate colleges spanning the entire length of the Central Valley.<sup>21</sup>

## Health and Medical Indicators

Most of the Central Valley's counties have fewer physicians and fewer hospital beds per 100,000 population than does California on average. The Central Valley also has higher rates of births to adolescent mothers and higher rates of inadequate prenatal care than the state as a whole, although rates vary widely among the counties; some counties compare favorably to state averages.

### Physicians and Hospital Beds

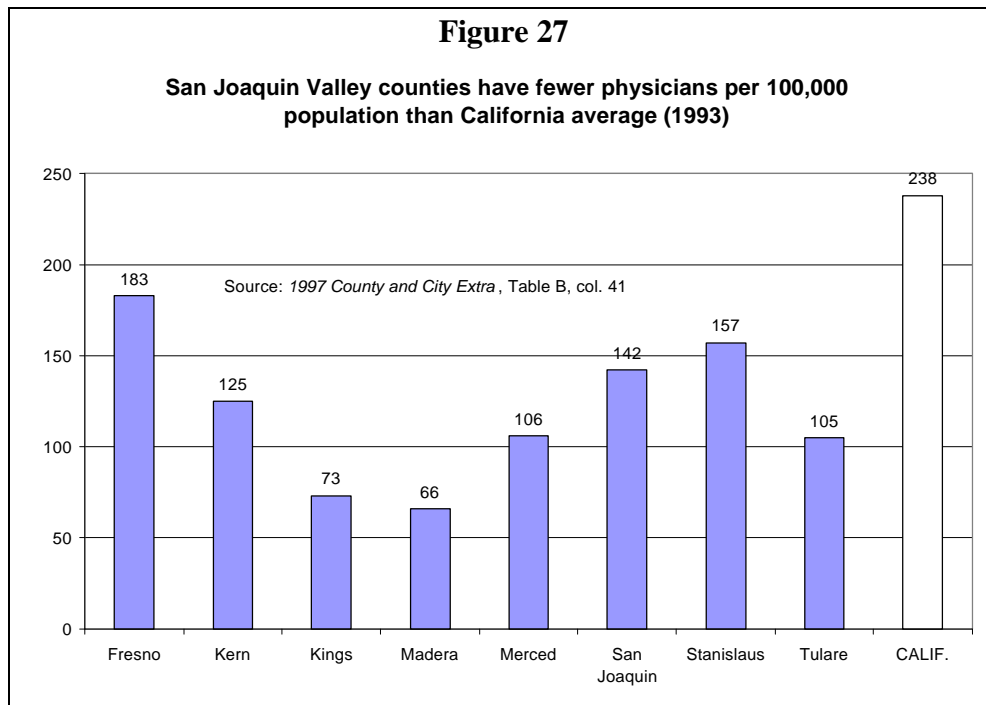
Other things being equal, a higher rate of physicians per 100,000 population suggests better access to health care. All but two counties (Yolo and Sacramento) fell below the state average on this measure for 1990.



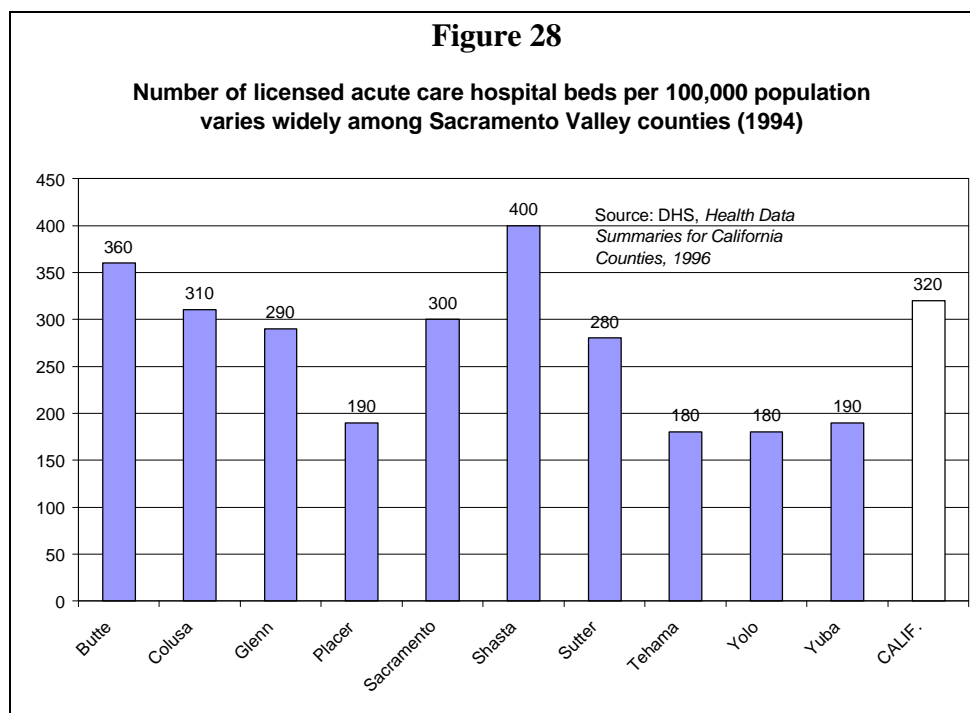
The comparison may not be quite as stark as suggested in *all* cases, though, because specialists must congregate in urban areas to have necessary facilities available and to have enough patients to maintain their practices. Further, in some cases, physician or hospital services may be available in an adjacent county.<sup>22</sup> Plainly, however, several valley counties are short of physicians and many have relatively few general acute care hospital beds.

Yolo County is home to the UC Davis Medical School, and Sacramento County is the most populous in the Central Valley and home to the UC Davis Medical Center. Those factors help to account for the relatively high standing of those counties with respect to numbers of physicians.

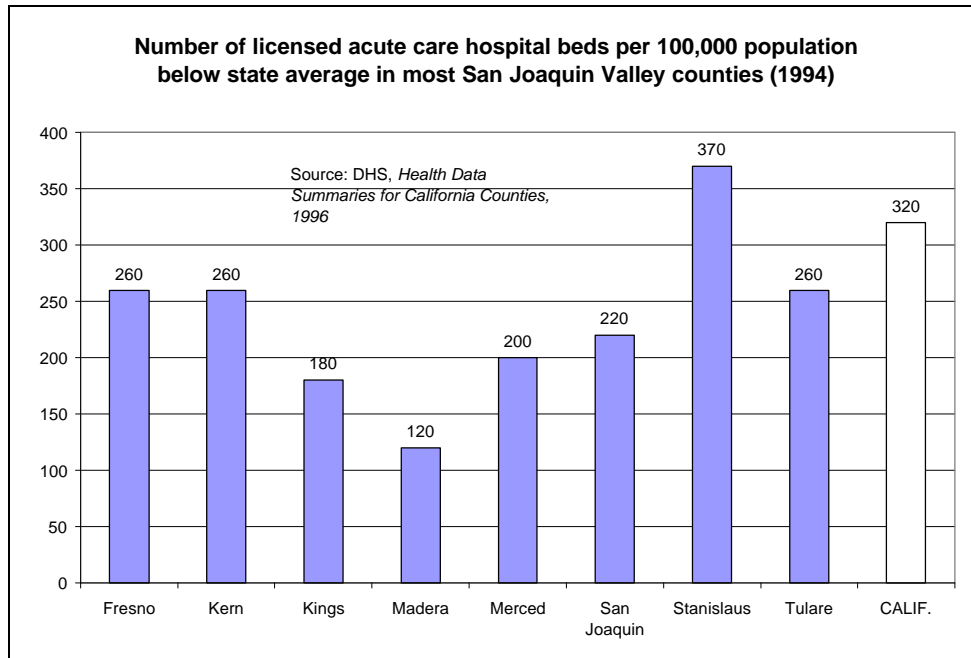




A broadly comparable pattern appears with respect to general acute care hospital beds, although several valley counties rank above the state average on this measure (based on 1994 data).



**Figure 29**



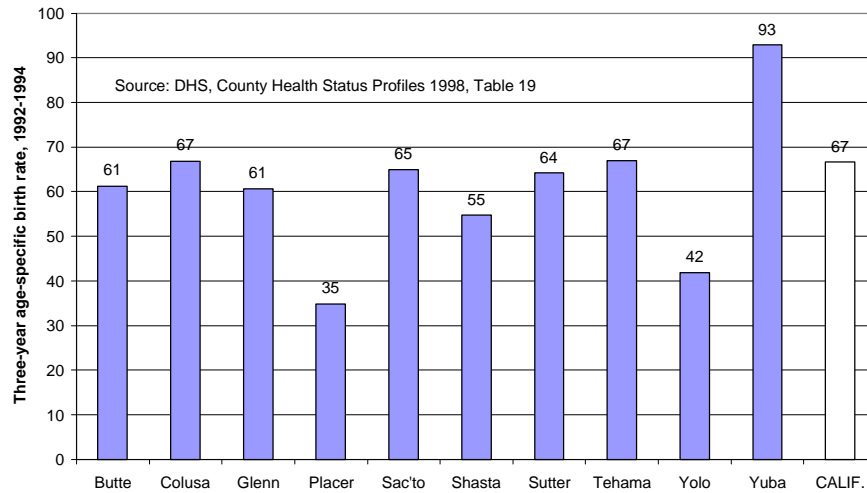
### Births to Adolescents

Some counties in the Central Valley have higher percentages than the state as a whole in an important health-related indicator: rate of births to adolescents. This indicator is important because births to adolescents may be associated with higher rates of poverty, single-parent families (more likely to have low incomes), and health complications.

However, rates vary, and some counties have percentages that are about the same as or lower (that is, better) than the state as a whole on this measure. In general, birthrates among teenagers tend to be higher in the San Joaquin Valley counties than in the Sacramento Valley counties. The figures should not be assumed to be exact, as they are subject to statistical uncertainty, especially where populations are relatively small.

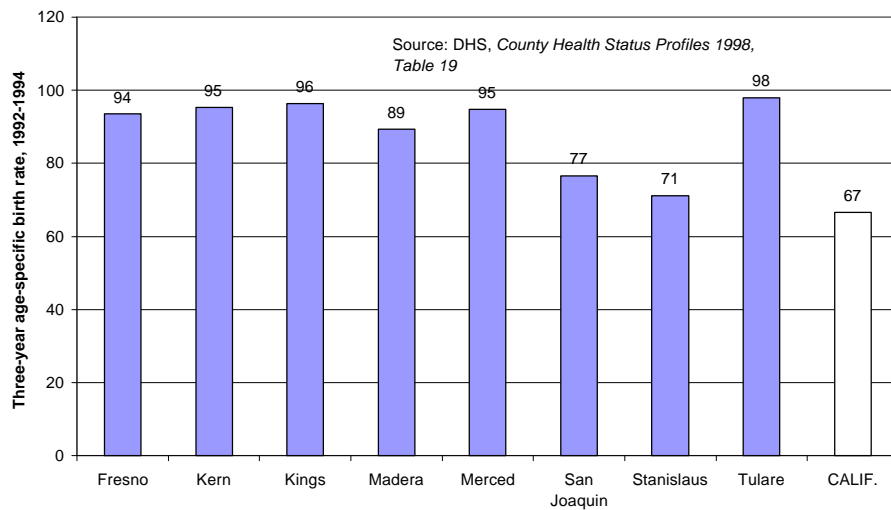
**Figure 30**

**Birthrate among adolescent mothers (15-19) varies widely among Sacramento Valley counties**



**Figure 31**

**Births to teenage mothers (15-19) more common in San Joaquin Valley counties than state average**



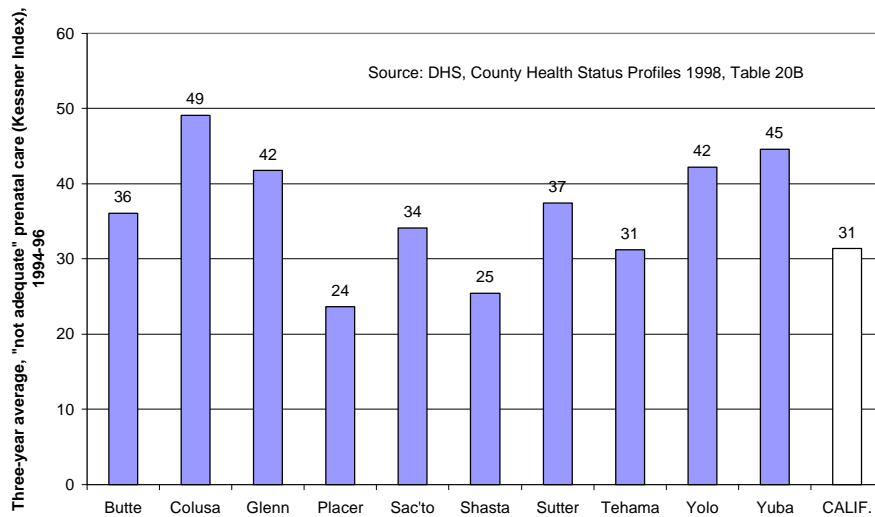
The picture presented by the two charts above differs somewhat from that in the comparable charts in the 1997 edition of this report, as a different measure has been used.

## Prenatal Care

Inadequate prenatal care can lead to acute and chronic health problems for children and can increase risks for mothers. In most counties of the Central Valley, inadequate prenatal care is more common than in California as a whole. Some counties compare favorably, but even the statewide figure is higher than desirable.

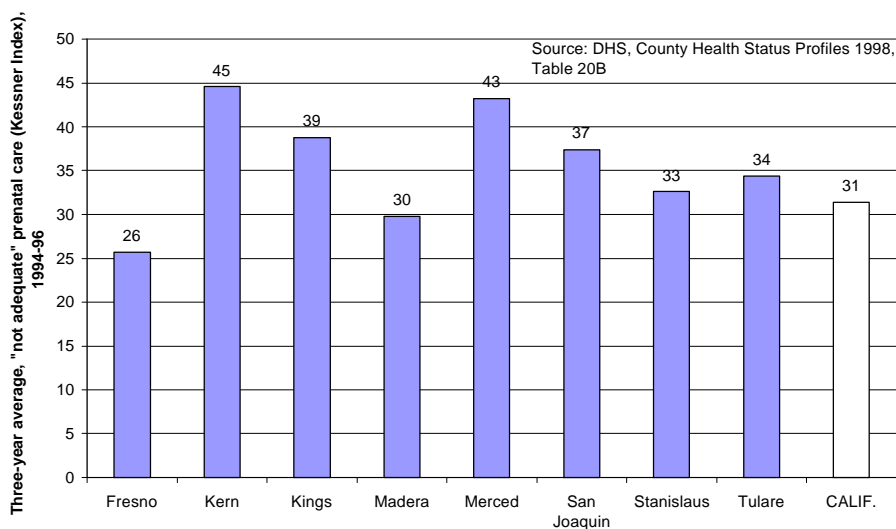
**Figure 32**

**Inadequate prenatal care is more common in most Sacramento Valley counties than in state as a whole**



**Figure 33**

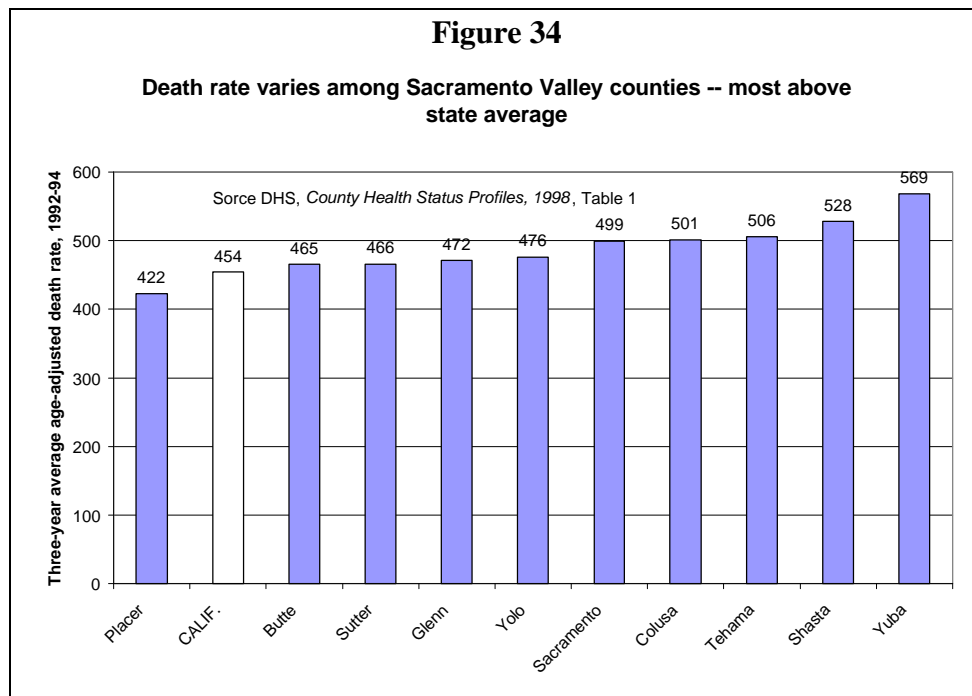
**Inadequate prenatal care more common in most San Joaquin Valley counties than in state as a whole**



## Death Rates

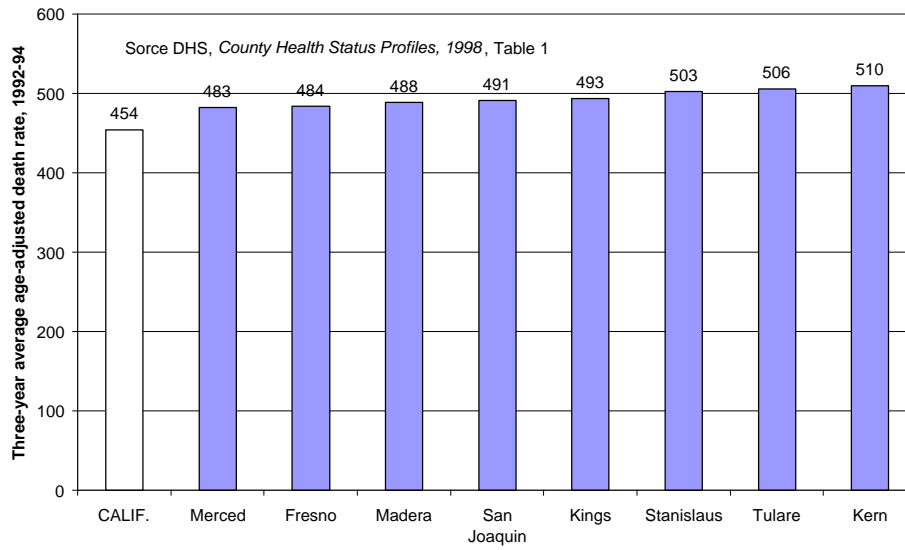
One broad measure of health is the death rate (deaths due to all causes). The following charts show figures on this measure among the Sacramento Valley and San Joaquin Valley counties, with the statewide figure as a comparison. These are three-year average (1992-94) age-adjusted death rates per 100,000 population. Such figures are subject to statistical uncertainties. The larger the population, the more reliable the figure. See *County Health Status Profiles 1998*, published by the California Department of Health Services, for details and explanations.

The differences among the counties and between the counties and the state as a whole are relatively modest in most cases. Nonetheless, only Placer County has a better (lower) figure on this measure than does California as a whole.<sup>23</sup>



**Figure 35**

**Death rates among San Joaquin Valley counties above state average**

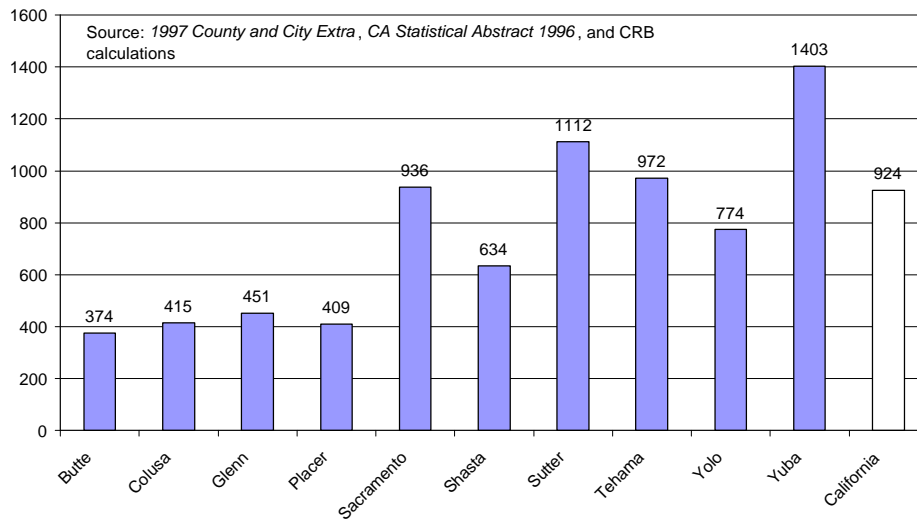


# Crime

There are many possible measures of crime. Below are two simple measures reflecting rates of serious violent crime and serious property crime known to police. Overall, Central Valley counties' standing is mixed, with some counties faring much better than the state average, some much worse, and some about the same.

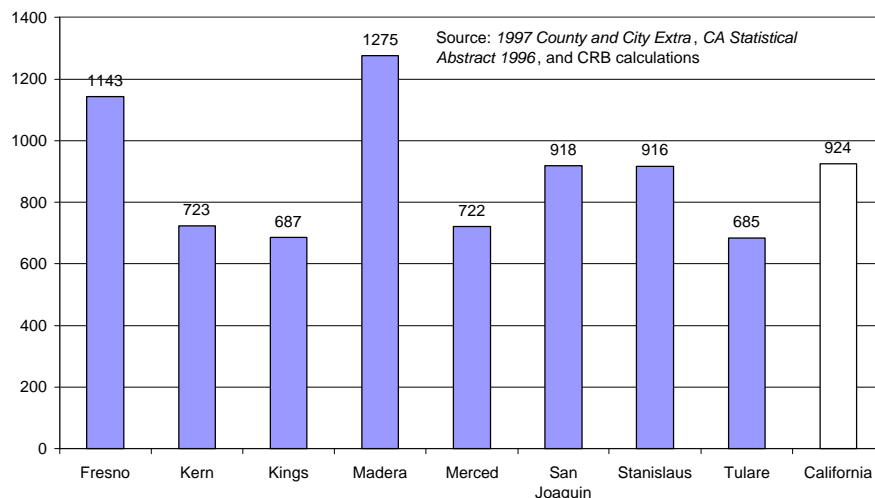
**Figure 36**

**Most Sacramento Valley counties below California average for serious violent crimes per 100,000 population, 1995**



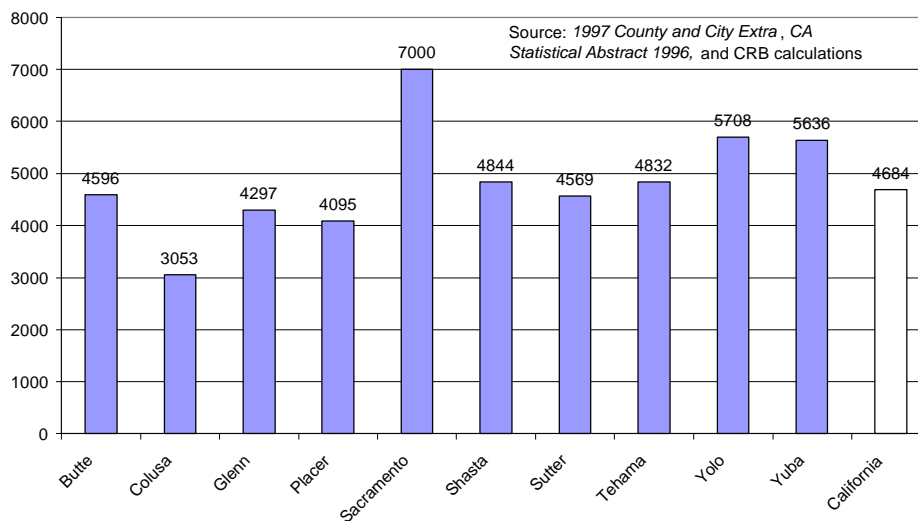
**Figure 37**

**Most San Joaquin Valley counties comparable to or below state average for serious violent crimes per 100,000 population, 1995**



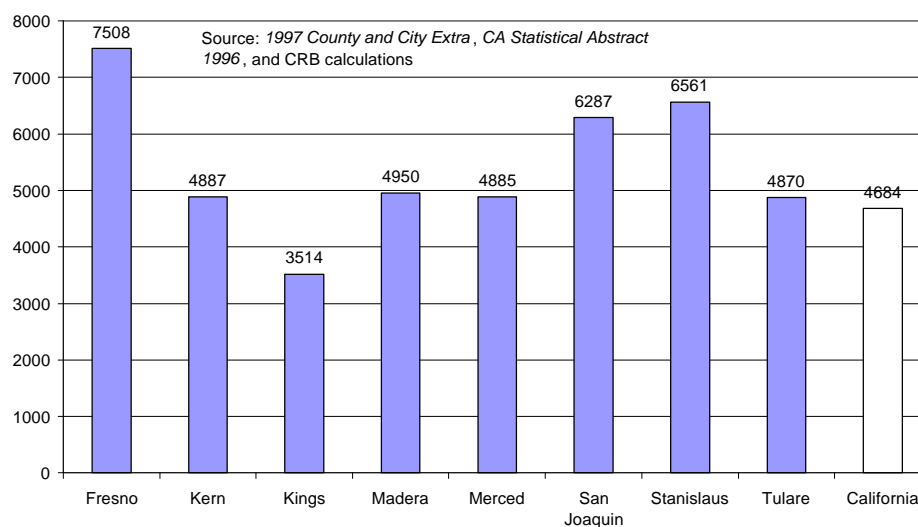
**Figure 38**

**Sacramento Valley counties vary in number of serious property crimes per 100,000, 1995**



**Figure 39**

**San Joaquin Valley Counties vary in number of serious property crimes per 100,000 population, 1995**



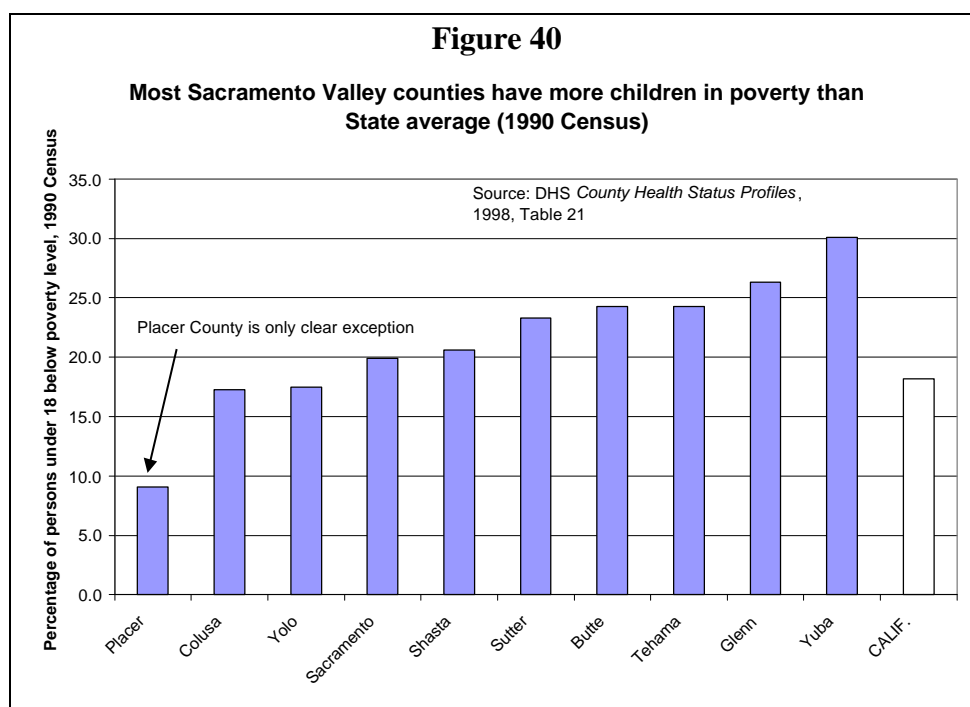


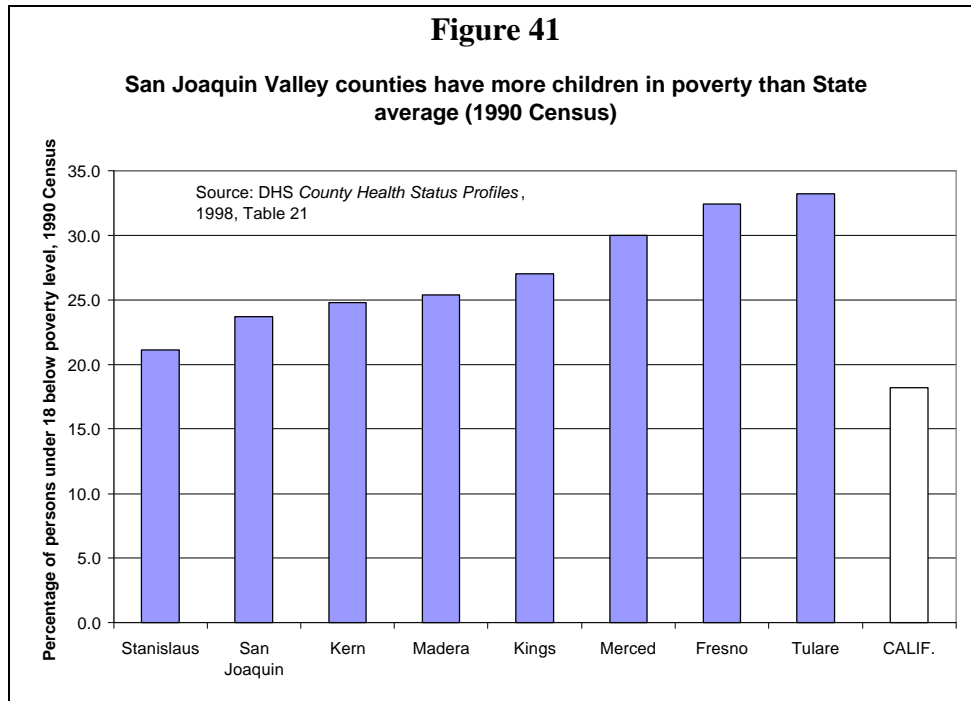
## Challenges of Poverty and Unemployment

Most Central Valley counties (north and south) have higher rates of poverty than the California average, a situation that is influenced by the agricultural orientation of much of the Central Valley's economy and workforce. Median household incomes are below the state average; unemployment rates are unusually high, as almost all Central Valley counties exceed the state average, some by two or three times.

### Poverty Rates

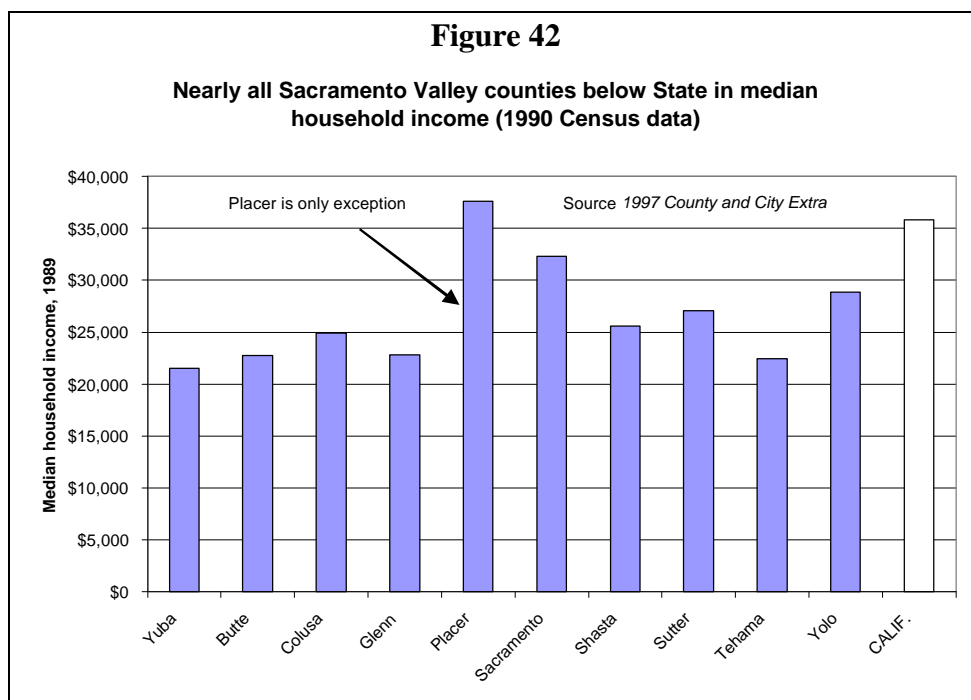
As with a number of indicators, Placer County is an exception to the pattern of the valley as a whole.

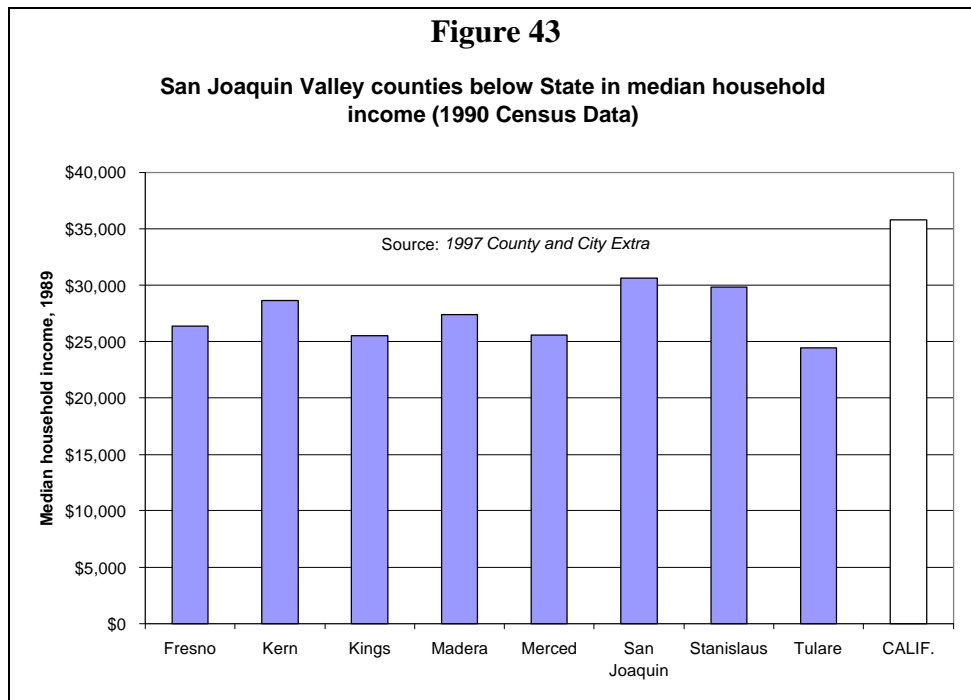




## Household Incomes

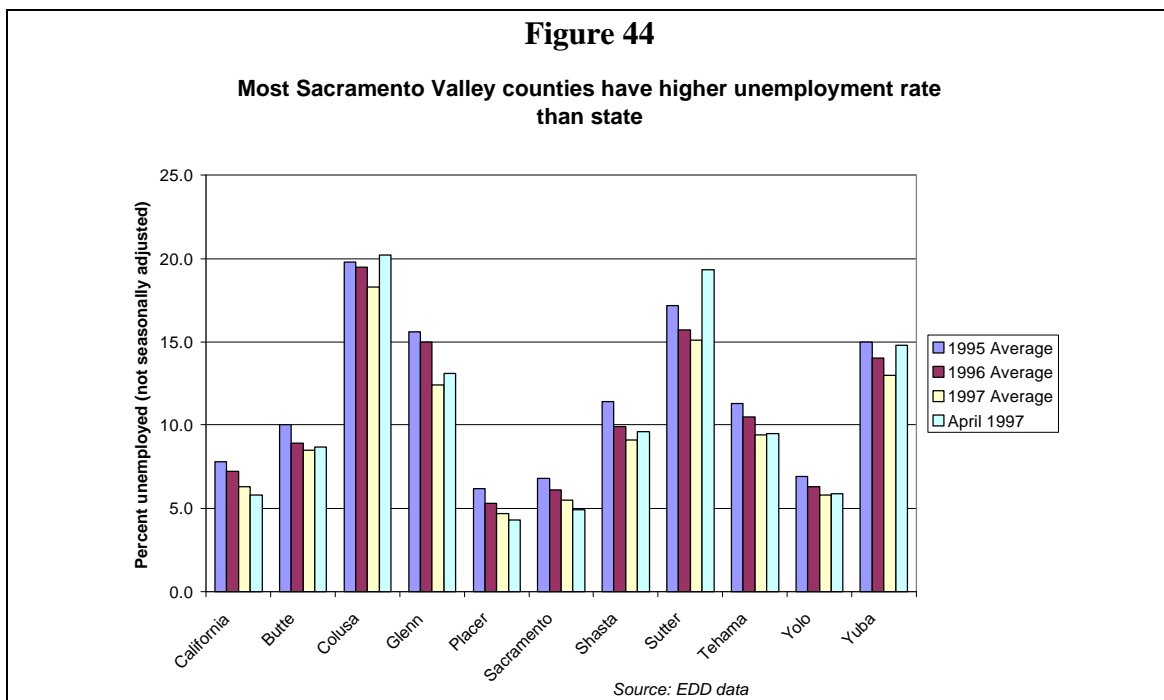
Household income data reflect the 1990 Census, and therefore are now nearly a decade old. The comparative *pattern*, however, appears likely not to have changed significantly in that time. Here, again, Placer is unusual, as it is more prosperous than the California average by this measure.





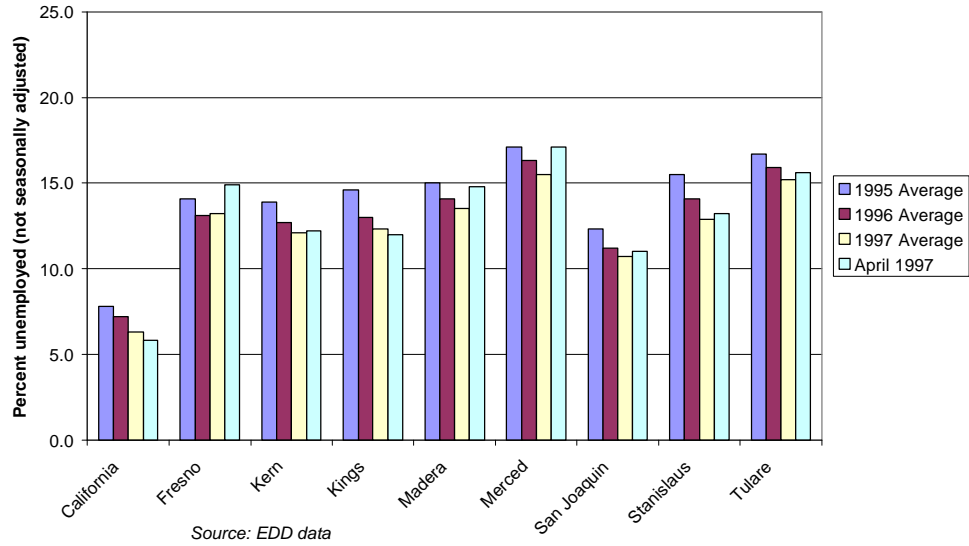
## Unemployment

Rates of unemployment, like many other indicators, vary among the counties, but are high in many Central Valley counties. The charts below show the 1995, 1996, and 1997 annual averages and the one-month figure for April 1998.



**Figure 45**

**San Joaquin Valley counties have higher unemployment rate than state**

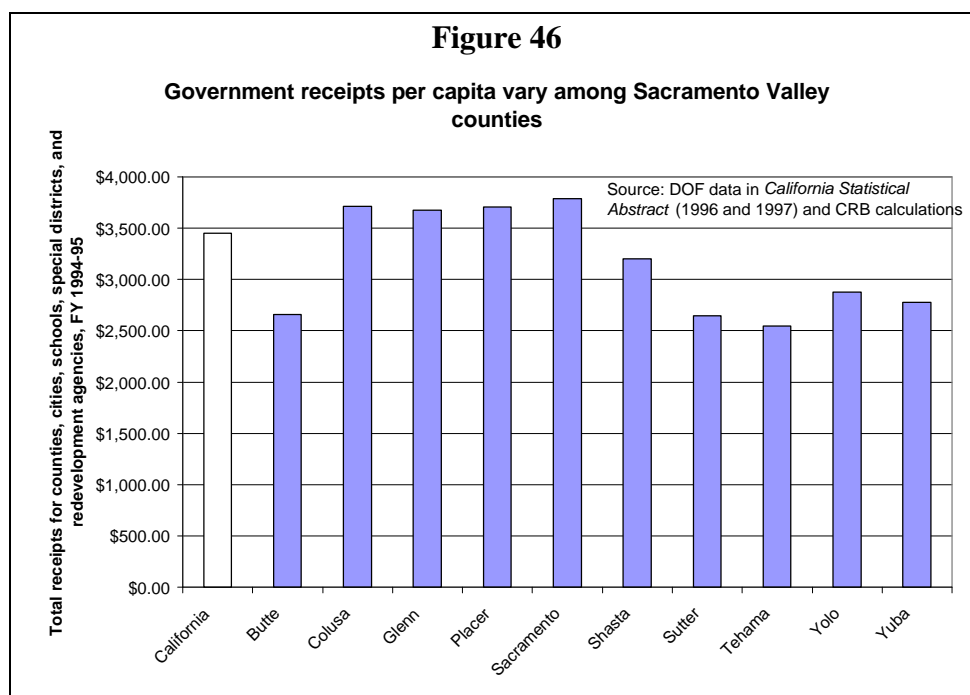


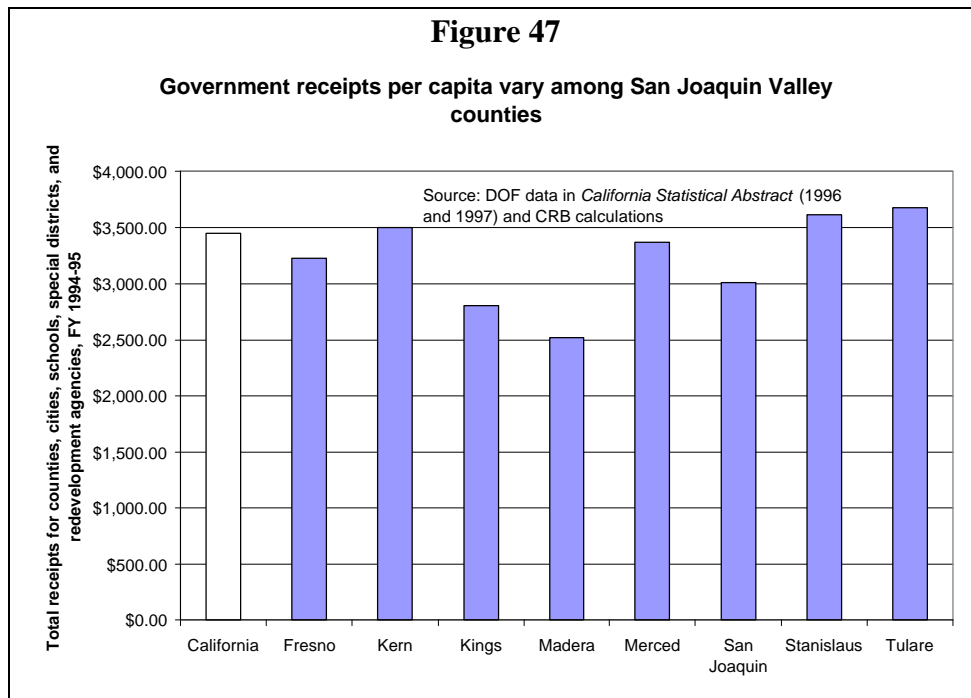
## Economy and Infrastructure

The counties of the Central Valley vary not only in population, growth rates, and education and health indicators, but also in economic and infrastructure measures. Below are a few such measures, beginning with two broad economic indicators (government receipts, taxable sales), followed by some infrastructure elements (roads, rail, and aviation).

### Local Government Receipts

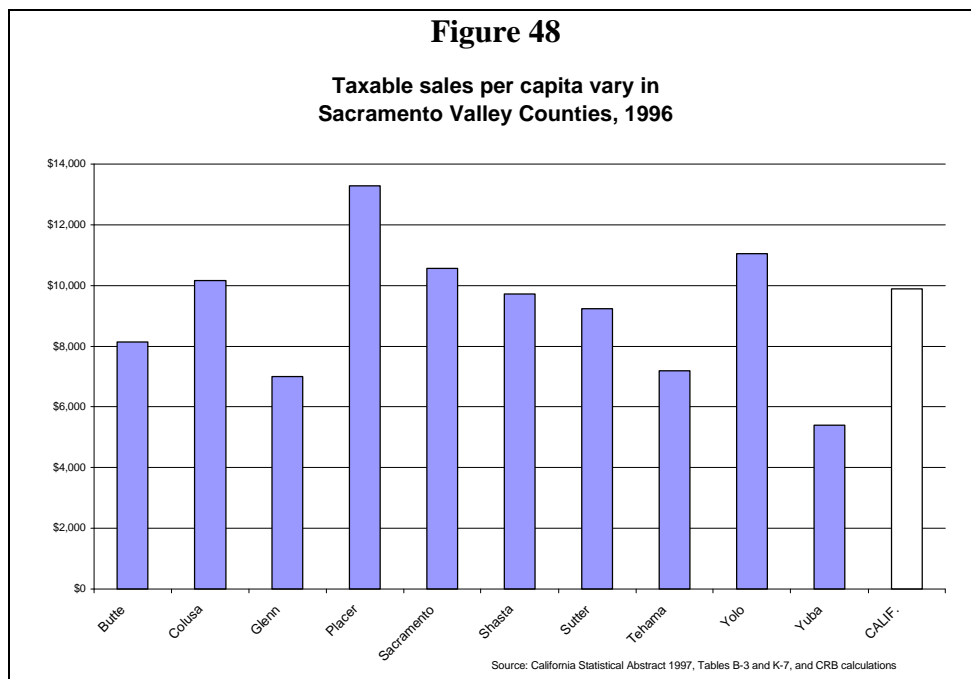
Local government receipts reflect a wide range of factors, including per capita income, property values, and presence or absence of industry. Some Central Valley counties fall well below the state as a whole in local government receipts per capita. However, several counties in both the Sacramento and San Joaquin Valleys are comparable to or even somewhat above the statewide average. The charts below show county data for 1993-94 and the state average for comparison.



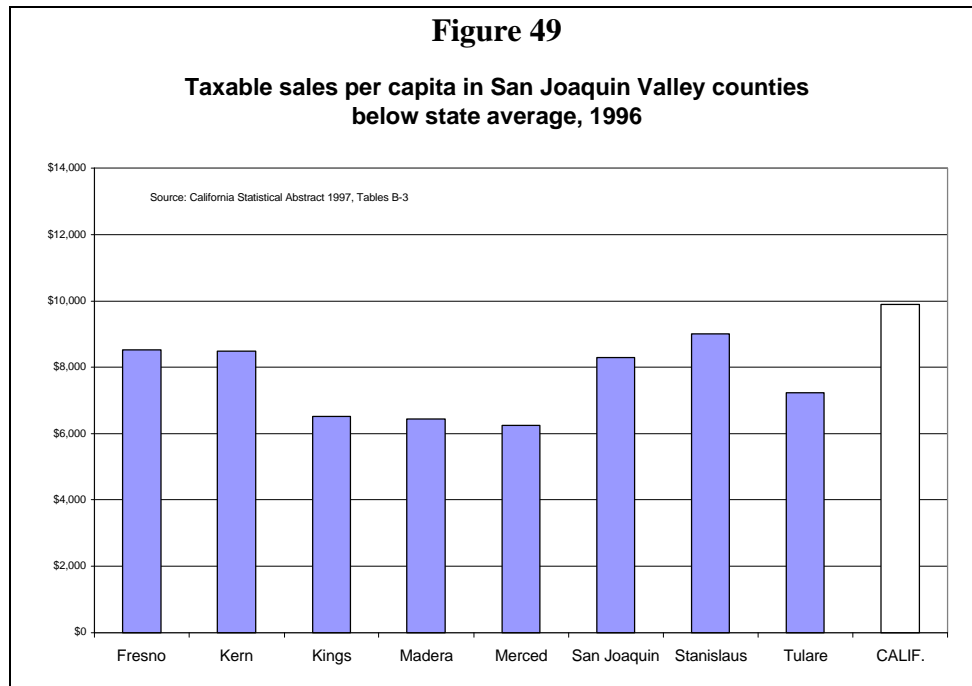


## Taxable Sales

Taxable sales data show Central Valley counties vary widely. Several counties, especially Yuba, Glenn, and Tehama (in the north) and Kings, Merced, Madera, and Tulare (in the south) are far behind the state average, although others are comparable or above the state average.<sup>24</sup>



Taxable sales per capita is only one measure of economic activity, but it does suggest a lower than average level in most Central Valley counties than in the state as a whole. Placer is a clear exception, although Yolo, Sacramento, and Colusa also fall above the state average, and Stanislaus, Fresno, and Kern are not far below.



Infrastructure is a complex topic, encompassing many of the basic elements of transportation, communications, and public services. The charts below focus on three aspects: roads, rail transportation, and commercial aviation facilities. All are key elements of transportation and commerce.

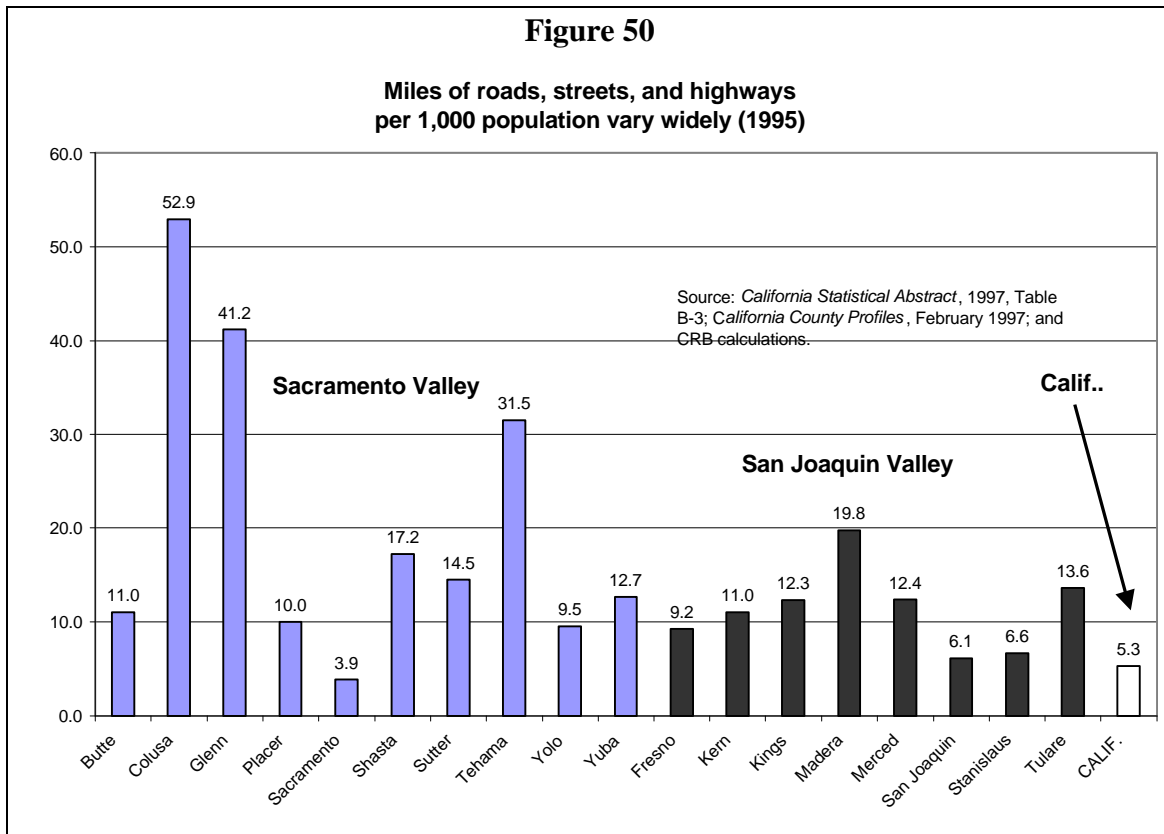
## Roads

The entire Central Valley is connected along two main arteries: State Highway 99 and Interstate 5. The two meet at a point several miles south of Bakersfield. Going north from that junction, Highway 99 diverges to the east and Interstate 5 (I-5) to the west, and the two form generally parallel paths that come within hailing distance of one another in Sacramento, diverging again on the way north. Highway 99 meets up again with I-5 in Red Bluff, and ends at that point, while I-5 stretches onward to the northern terminus of the Central Valley, and then beyond into Oregon and Washington. To the south of Bakersfield, I-5 stretches through Los Angeles and all the way to Mexico.

There is little romance to I-5, but Highway 99 is another story. The road's glory days may be well in the past – the days of the roadside "Mammoth Orange" stands that old-timers might remember (and that now are only shadows of their former presence<sup>25</sup>) – but history and culture linger on in *Highway 99: a literary journey through California's Great*

*Central Valley*. That book, edited by Stan Yogi, is an anthology of fiction and nonfiction centered on the historic highway and its adjacent communities.

The last reminder of a more leisurely time, a stoplight along Highway 99 in Livingston, disappeared with the completion of a bypass in 1997.



Numerous east-west highways and other local roads complete the network of asphalt and concrete along the Central Valley. Highway 152, for example, extends from Highway 99 just south of Chowchilla to Watsonville, west of the Santa Cruz Mountains. Major roads (Interstate 80, Highway 50, and others) extend west and east from Sacramento, connecting to the San Francisco Bay area and to Lake Tahoe. From Bakersfield, Highway 58 stretches east across the Mojave Desert, eventually reaching Barstow.

In general, though, the main roads along the Central Valley are north-south, matching the long, narrow, north-south orientation of the valley.



## Rail Transportation\*

Union Pacific owns the main freight railroad line through the Central Valley.<sup>26</sup> This route is parallel to, and visible from, Highway 99 from northern Kern County to southern San Joaquin County. Another railroad line, the Atcheson, Topeka, and Santa Fe (AT & SF), follows a path a few miles to the east of the Southern Pacific line. A spur line breaks from the main route and follows a path a few miles west of Highway 99 from Bakersfield to Fresno. It is along this line that Amtrak passenger trains run.

Amtrak's San Joaquin trains begin their runs in Bakersfield and proceed north along the western AT & SF route to Fresno via Wasco, Corcoran, and Hanford. At Fresno, Amtrak trains run along the main AT & SF line to Stockton, making intermediate stops at Madera, Merced, Turlock, and Riverbank. At Stockton the Amtrak trains continue their westbound trip along AT & SF tracks through Antioch to Martinez, where the San Joaquin route then switches to track owned by Southern Pacific for the rest of its trip to Oakland. Currently, four passenger trains a day travel the route from Bakersfield to Oakland, but there are plans to add a fifth round trip by the end of 1998. In November 1997, an average of almost two thousand people a day rode an Amtrak San Joaquin train, representing a 21% increase in ridership over the previous year.<sup>27</sup>

Some observers see a bright future for rail transportation in the Central Valley. In September 1996, the California Intercity High-Speed Rail Commission released a report detailing its plan to connect valley cities with a very fast railroad. For a summary, see [http://www.transitinfo.org/HSR/ex\\_sum.html](http://www.transitinfo.org/HSR/ex_sum.html). The exact alignment of the high-speed rail line has not been decided, but two appear to be the most likely. The "short" alignment would begin at Union Station in Los Angeles and provide service to Burbank Airport and Santa Clarita before crossing the Grapevine to Bakersfield, Visalia, Fresno, Merced, Modesto, and Stockton. The trains would then travel over the Altamont Pass into Pleasanton and Newark before skirting San Francisco Bay to downtown San Francisco. This route would allow travelers to leave Los Angeles and be in San Francisco about three and a half hours later, for an average speed of 134 miles per hour.

The more-likely "long" alignment would also start in Los Angeles and travel over the Grapevine, but would veer west at Fresno, proceed across the Pacheco Pass, and continue to Gilroy, San Jose, and Newark before terminating at Oakland. This plan allows for a future extension to Sacramento. Trains using this proposed route would take a little less than three hours to go from Los Angeles to the East Bay. Ridership along this route is expected to be ten to fourteen million a year by 2015, depending on the type of high-speed rail technology selected. A summary of the commission's report can be found at [www.transitinfo.org/HSR/ex\\_sum.html](http://www.transitinfo.org/HSR/ex_sum.html).

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\* This section was contributed by James D. Umbach, a student at California State University, Sacramento, who has a longstanding interest in public transportation

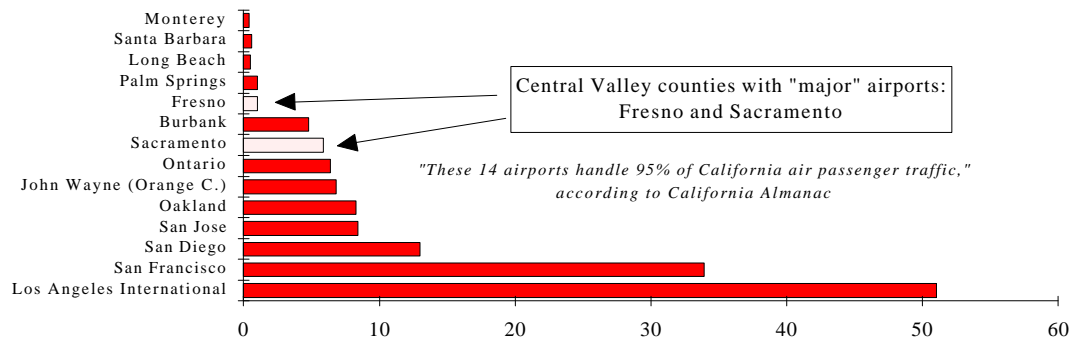


## Commercial Aviation

The Central Valley's commercial airports handle fewer passengers and smaller amounts of cargo than those in the major urban centers of the state. The Central Valley's only large passenger airport is Sacramento International Airport, although the Central Valley has several smaller commercial airports.

**Figure 52**

### Central Valley airports have minor share of air passenger traffic



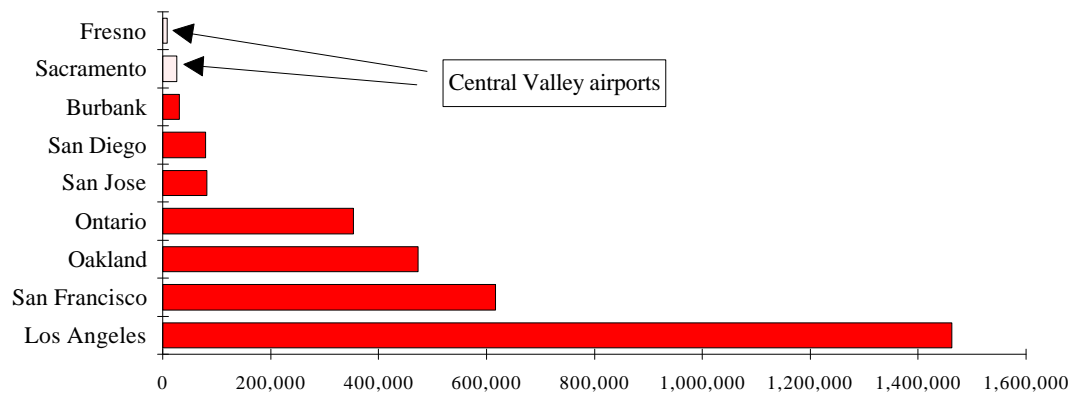
Source: federal and Calif. data cited in  
*California Almanac*, 7th Ed.  
(Pacific Data Resources)

Millions of Passengers, 1994

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**Figure 53**

### Central Valley airports have small role in the air cargo business



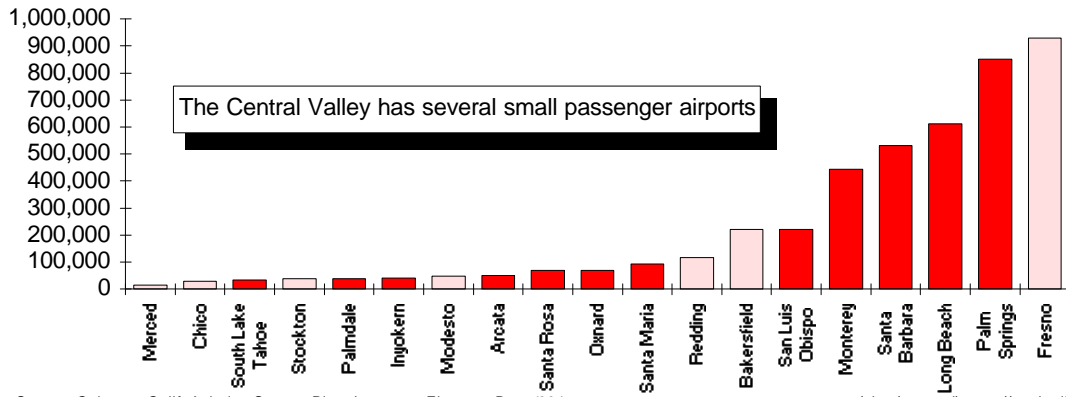
Source: California Department of Transportation,  
*California Aviation System Plan: Inventory Element*, December 1994

Tons (1993)

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**Figure 54**

**California Commercial Service Airports with  
Less than One Million Passengers in 1993**



Source: Caltrans, Calif. Aviation System Plan: Inventory Element, Dec. 1994

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## Environmental Issues and Characteristics

The Central Valley faces a broad range of environmental issues, as does the rest of California. Likewise, the region encompasses important environmental resources. Among the important environmental concerns are:

- Water resources
- Air pollution
- Endangered species protection
- Farmland preservation

These issues are highlighted briefly below and supplemented by information on the bioregion and its plant and animal habitats.

### Overview of the Central Valley's Bioregions

The Central Valley comprises two bioregions: the Sacramento Valley and the San Joaquin Valley. The Sacramento Valley Bioregion encompasses the northern end of the Central Valley, stretching from Redding to southeast Sacramento County and the edge of the Sacramento-San Joaquin River Delta. The San Joaquin Valley bioregion extends from the Delta south to the edge of the Valley floor. Both bioregions are relatively flat expanses, bordered on the west by the coastal mountain ranges and on the east by the Sierra Nevada.

Water, both in terms of resources and use, defines the two bioregions. Two major rivers, the Sacramento and the American, carry water from the Sierra Nevada into the Sacramento-San Joaquin River Delta. The Delta supplies water to the southern part of California, providing enough to supply more than 32 million people and making possible the vast array of agricultural commodities of the San Joaquin Valley. The San Joaquin Valley contains the San Joaquin River, as well as tributaries of the Stanislaus, Tuolumne, Merced, and Fresno rivers.

Both bioregions are well suited for farming, with hot dry summers and wet, mild winters. The San Joaquin Valley is California's leading agricultural bioregion, producing a wide variety of fruits and vegetables. The Sacramento Valley is known for its tomatoes, rice, and other orchard crops, but only Sutter, Yolo, and Colusa counties are in California's top 20 agricultural producers.

The Central Valley's sites are also attracting more urban and suburban residents. According to 1990 census data, 2 million people live in the San Joaquin bioregion, and the cities of Fresno and Modesto are growing rapidly. Similarly, more than 1.5 million people

inhabit the Sacramento Valley bioregion, with growth occurring in Sacramento and its suburban areas.

Historically, millions of acres of wetlands flourished in both bioregions, but stream diversions, dams, and dikes have dried all but 5 percent. Nonetheless, the Central Valley remains an important rest stop for migratory waterfowl: each year, millions of ducks, geese, and other birds winter at the many seasonal wetlands and wildlife refuges owned and managed by the Departments of Fish and Game and Parks and Recreation, and the U.S. Fish and Wildlife Service.

Other consequences of water diversions, agriculture, and suburban growth in the bioregions have become significant environmental issues. These issues include erosion and increased sediment in streams, nonpoint source pollution (also known as polluted runoff) from both farms and urban areas, loss of riparian areas and natural vegetation, air and water quality problems, and endangered and threatened species.

Many efforts are underway to address these issues at the federal, state, and local level. Local governments are improving land use planning to avoid conflicts between agriculture and suburban development. State agencies are working with federal agencies, counties, cities, resource conservation districts, and nonprofit organizations to assess and restore natural habitats in many watersheds. State and nonprofit conservancy organizations are purchasing lands to restore or enhance wildlife habitat and preserve it in perpetuity. Farming and conservation groups are exploring the issue of agricultural land conversion and ways to encourage farmland preservation.<sup>29</sup>

Information about such efforts, as well as other environmental information, is available from the California Environmental Resources Evaluation System (CERES). Its data may be obtained at the website maintained by the California Resources Agency at <http://www.ceres.ca.gov>.

## **Water**

Water is critical to the Central Valley. It is not only important for agriculture and its other beneficial uses. Water is a key part of defining the Central Valley.

### *WATER RESOURCES*

The Central Valley encompasses three different hydrologic regions:

- Sacramento River
- San Joaquin River
- Tulare Lake

The Sacramento River hydrologic region contains the entire drainage area of the Sacramento River and its tributaries. It begins upstream of Shasta Lake near the Oregon border and extends south to the Sacramento-San Joaquin Delta. The San Joaquin River hydrologic region contains the entire drainage area of the San Joaquin and its tributaries. It extends from the Delta and the Cosumnes River in the north to the southern reaches of the San Joaquin watershed. The Tulare Lake Region includes the Southern San Joaquin Valley. It ranges from the southern limit of the San Joaquin River watershed to the crest of the Tehachapi Mountains.

### **Groundwater**

California gets much of its water from groundwater. To get groundwater, one needs only to sink a well above a suitable aquifer and begin pumping. Historically, there have been few controls on the amount of groundwater anyone could pump. This has led, in some areas, to people pumping more water out of the aquifer than is replenished naturally or by artificial recharge. This condition is known as overdraft. When an aquifer has been severely overdrafted, it physically loses that storage capacity permanently. That is, it will never again be able to hold the pre-overdraft amount of water.

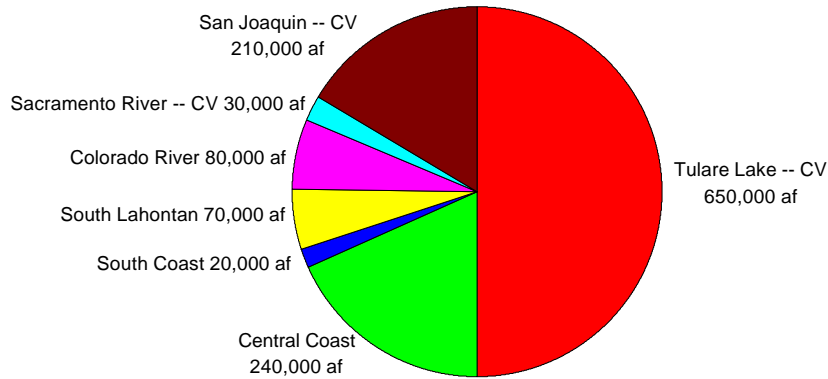
Problems associated with overdraft include:

- Storage capacity drops – leading to a permanent loss of supply
- Water levels fall – necessitating deepening and possibly abandonment of wells and higher pumping costs
- Land subsidence – the surface elevation declines

The Tulare Lake region has experienced the greatest problems with groundwater overdraft.

**Figure 55**

**Groundwater Overdraft by Hydrologic Regions  
(Average Water Year -- 1990 Development)**



Source: Department of Water Resources, Bulletin 160-93

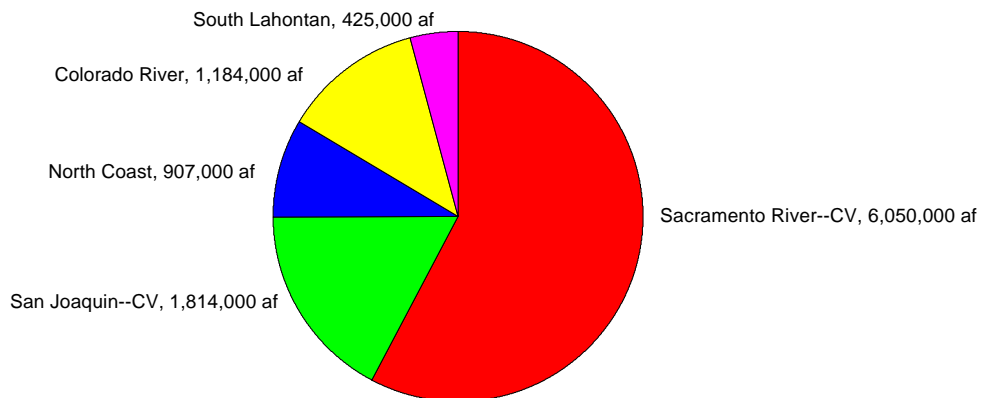
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**Exports**

The northern part of the Central Valley provides much of the State's water. More water is exported from the Sacramento Region than all other regions combined.

**Figure 56**

**Water Exports by Hydrologic Regions  
(Average Water Year -- 1990 Development)**



Source: Department of Water Resources, Bulletin 160-93

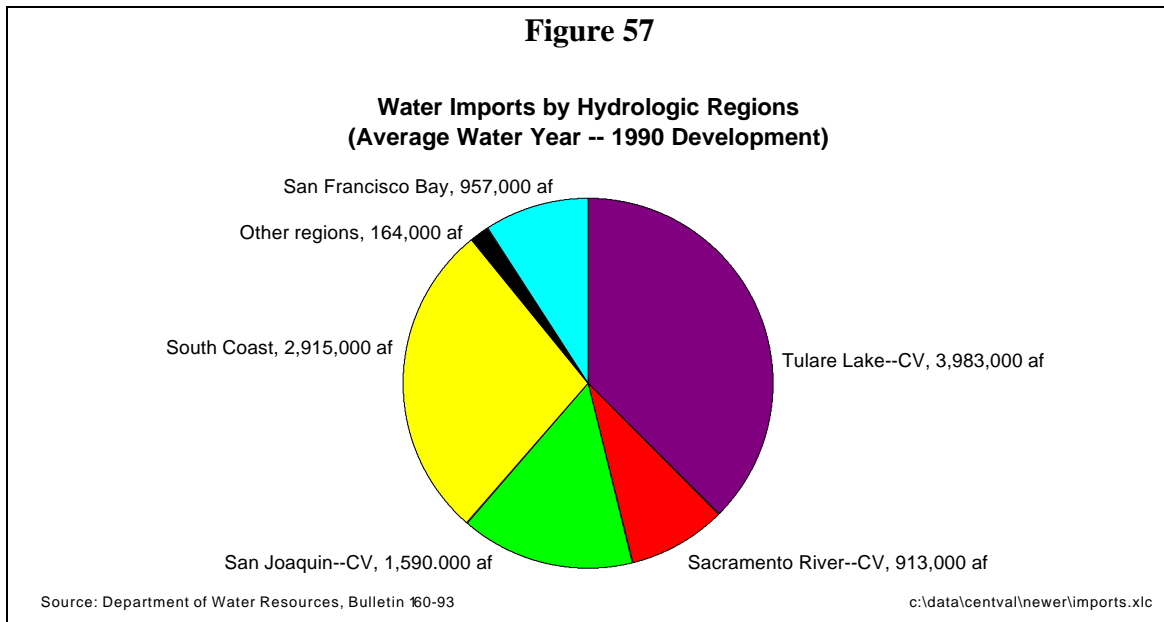
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**Imports**

The southern part of the Central Valley imports much of the State's water. The Tulare Lake Region imports more water than any other region. Most of the imports to the



Sacramento Region are passed on to other regions via the Central Valley Project and the State Water Project.



### *WATER USE*

Water not only comes from diverse sources, it is used in diverse ways across the Central Valley and across all of California.

### **Residential Water Use**

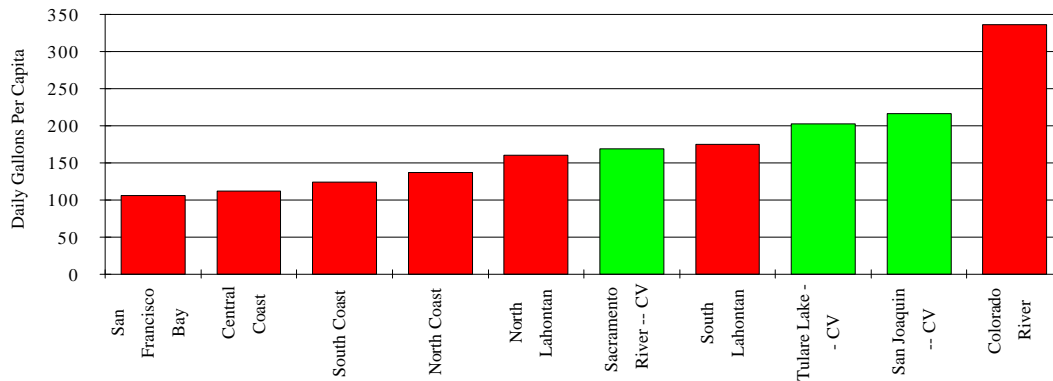
Households in the Central Valley tend to use more water on a per capita basis than all but the southern desert regions of the state.

**Figure 58**

**Residential Water Use by Hydrologic Regions**

Daily Gallons Per Capita

(Average Water Year – 1990 Development)



Source: Department of Water Resources, Bulletin 160-93

**Non-Residential Urban Uses**

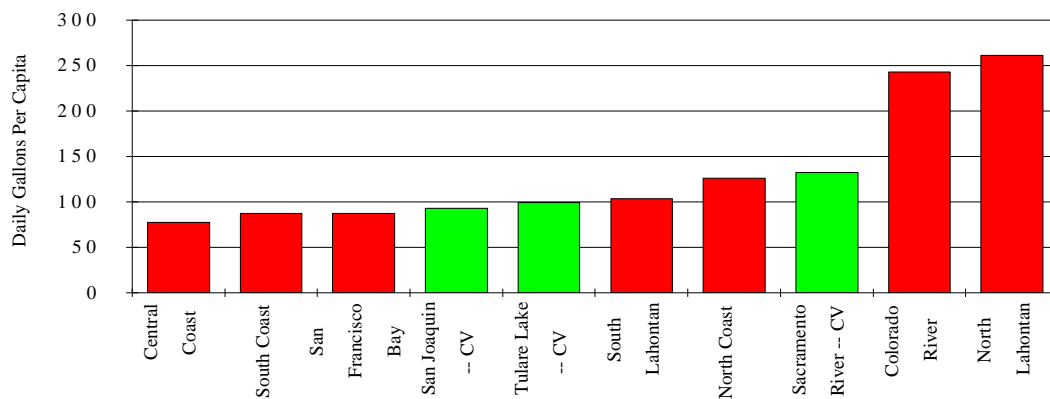
Commercial and industrial water use is in line with the rest of the state.

**Figure 59**

**Non-Residential Urban Water Use by Hydrologic Regions**

Daily Gallons Per Capita

(Average Water Year – 1990 Development)



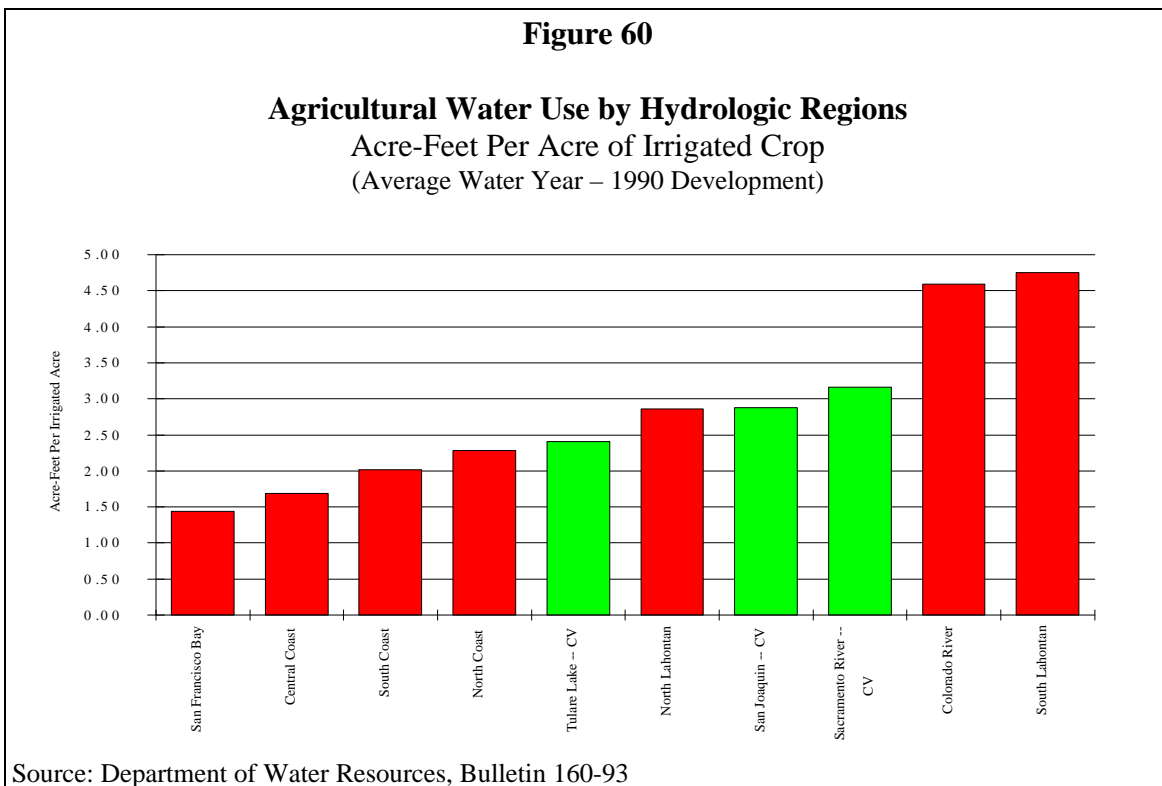
Source: Department of Water Resources, Bulletin 160-93

**Agricultural Water Use**

The amount of water used in agricultural depends on many things:

- Weather
- Soil Type
- Crop selection
- Irrigation technology

Nonetheless, using a very broad measure of efficiency, Central Valley farmers use significantly less water per acre of crop than in the Colorado River region (includes Coachella Valley and Imperial Valley) or South Lahontan region (includes Antelope Valley).



## Water Quality

The Central Valley, like all of California, has cleaner rivers, lakes, and streams since passage of the federal Clean Water Act in the 1970s. Federal and state clean water programs have helped to clean up many point sources of water pollution, such as industrial and municipal wastewater outfalls. Most of the remaining water quality problems stem from nonpoint source pollution, also called polluted runoff. This includes sediments, pesticides, solvents, and other materials that are washed into waterways by rainstorms. Many activities cause nonpoint source pollution, such as chemical spills, construction,

agriculture, timber harvesting, and residential use of pesticides, fertilizers, and other chemicals.

The U.S. Environmental Protection Agency requires the State to produce a list of impaired water bodies, that is, those water bodies that cannot meet their designated beneficial uses. Designated uses include drinking water supply, recreation, agriculture supply, hydropower generation, groundwater recharge, and others. The list, called the 303(d) List, is prepared by the State Water Quality Control Board, and describes the extent of contamination, source, and priority for identifying a cleanup program.

For the Central Valley, none of the major reservoirs are on the 303(d) List. However, several major rivers and tributaries are contaminated, as shown in the following table.<sup>30</sup>

NAME	POLLUTANT	SOURCE	AFFECTED AREA
Sacramento River (Red Bluff to Delta)	Diazinon	Agriculture	30 miles
	Mercury	Abandoned Mines	30 miles
Sacramento River (Shasta Dam to Red Bluff)	Cadmium, Copper, Zinc	Abandoned Mines	40 miles
Lower Feather River	Diazinon	Agriculture, Urban Runoff, Storm Sewers	60 miles
Lower Merced River	Chlorpyrifos, Diazinon	Agriculture	60 miles
Stanislaus River	Diazinon	Agriculture	48 miles
Lower Tuolumne River	Diazinon	Agriculture	32 miles
San Joaquin River	Boron, Chlorpyrifos, Diazinon	Agriculture	130 miles
Delta Waterways	Chlorpyrifos, Diazinon	Agriculture, Urban Runoff, Storm Sewers	480,000 acres
	Mercury	Abandoned Mines	

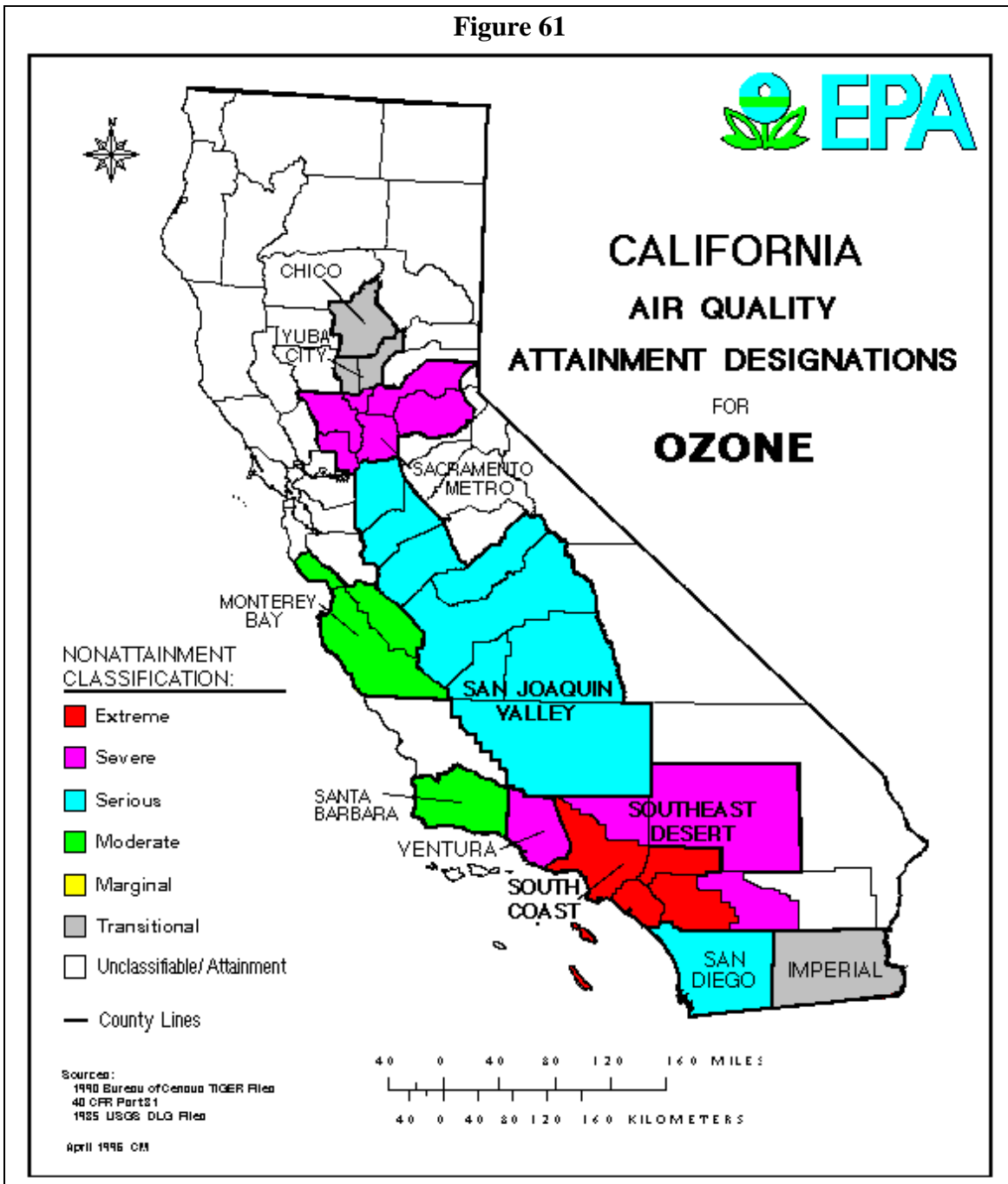
## Air Quality

The U.S. Environmental Protection Agency (EPA) measures six key air quality components. The four components that are a problem in California are:

- Ozone (O<sub>3</sub>)
- Particulates (PM<sub>10</sub>)
- Carbon Monoxide (CO)
- Nitrogen Dioxide (NO<sub>2</sub>)

Like much of California, the Central Valley has air quality problems. However, the air quality in the Central Valley is improving significantly.

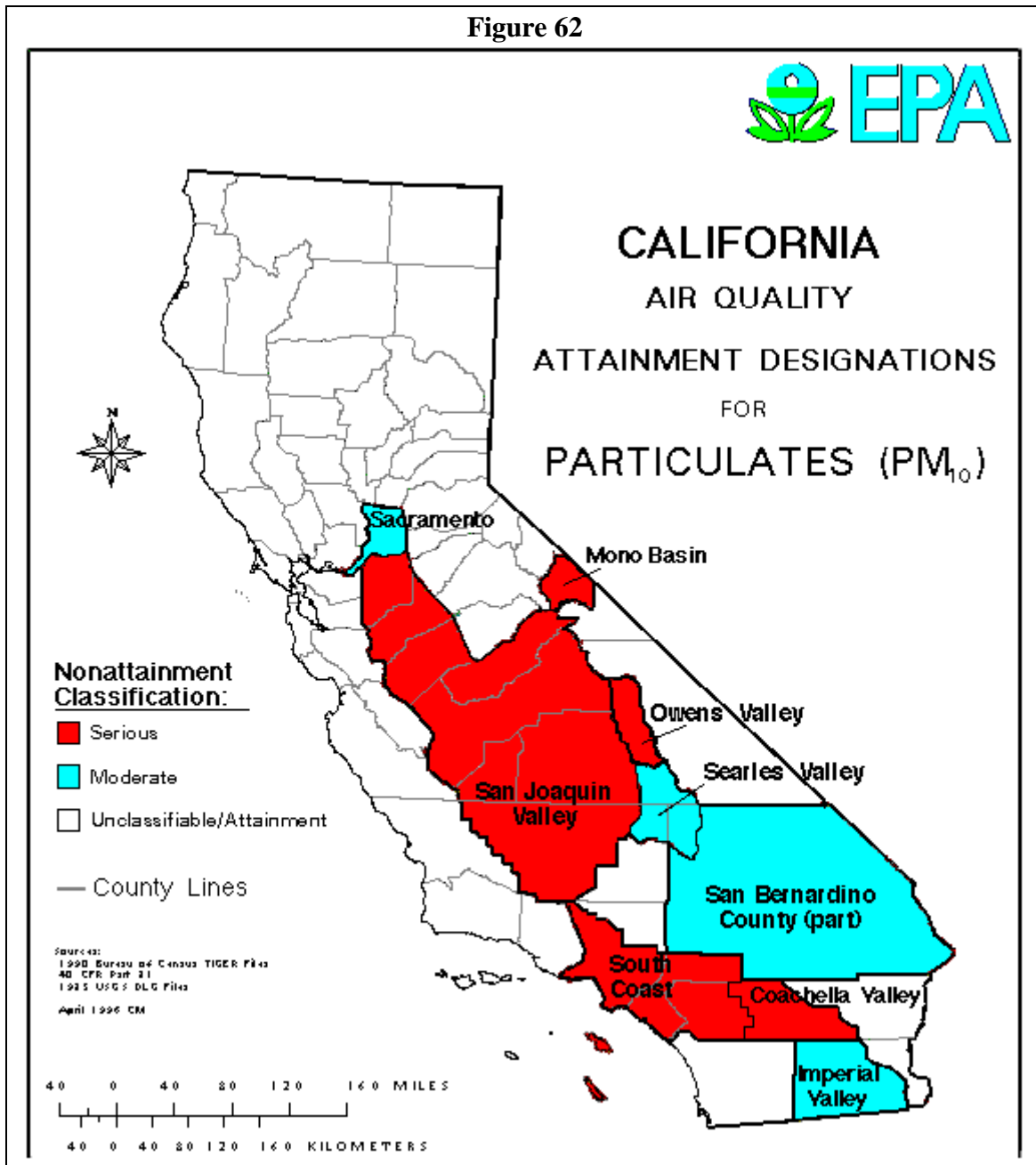
Figure 61



Ground-level ozone (O<sub>3</sub>), the major component of smog, is a significant problem in much of California. Ozone is not emitted directly into the air. Rather, it is formed through complex chemical reactions between volatile organic compounds (VOC) and nitrogen

oxides (NO<sub>x</sub>) in the presence of sunlight. Both VOC and NO<sub>x</sub> are emitted by motor vehicles and industrial sources.

Figure 62

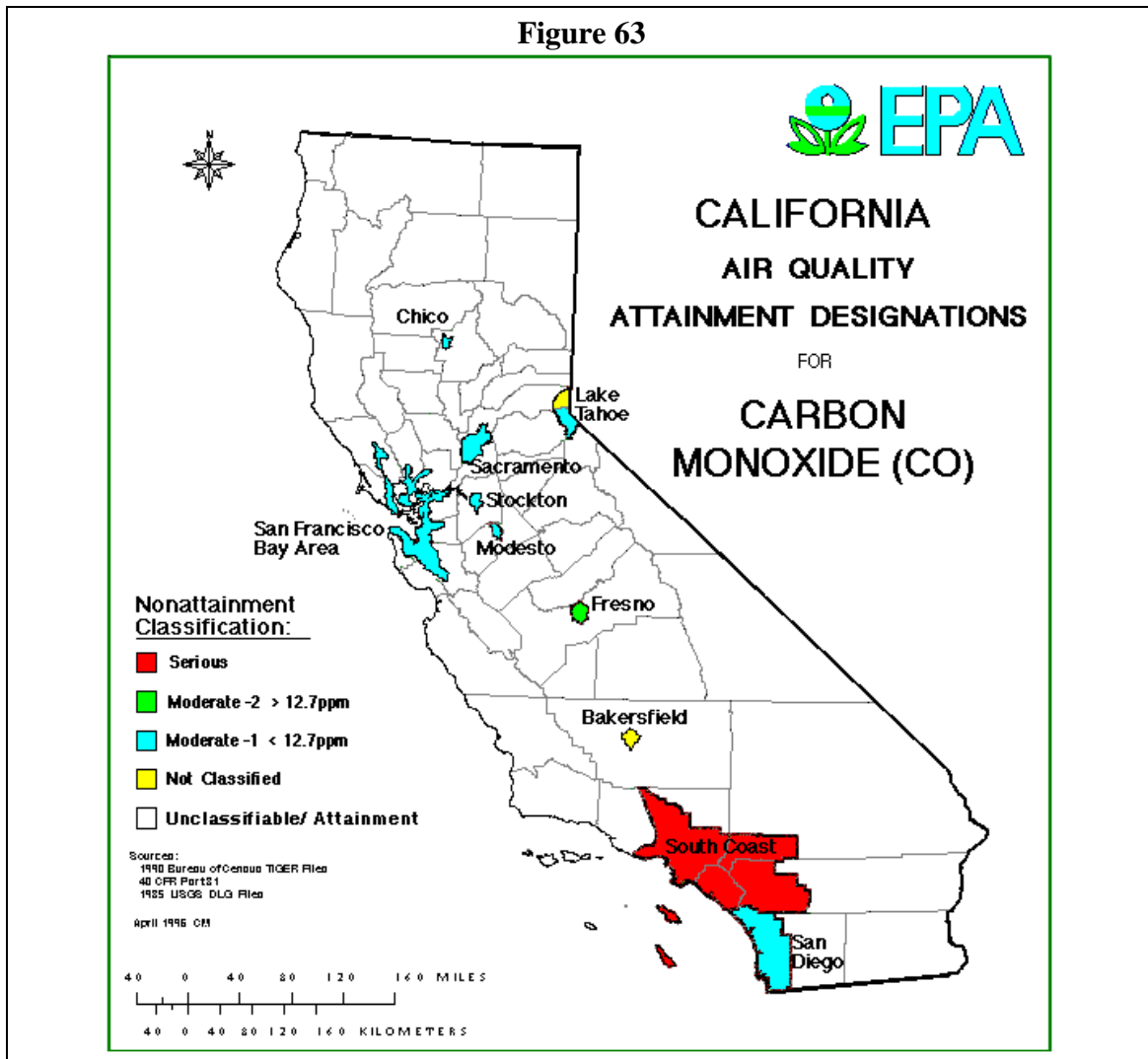


EPA has designated most of the Central Valley as “nonattainment” areas for ozone. However, ozone designations for Chico and Yuba City have recently been upgraded by the EPA to “attainment.” Between 1986 and 1995, peak ozone concentrations fell 13% in the Sacramento Metropolitan Area and 8% in the San Joaquin Valley.<sup>31</sup>

Particulates are another statewide pollution problem. The particulates that are of greatest concern include dust, dirt, soot, smoke, and liquid droplets directly emitted into the air by

sources such as factories, power plants, transportation sources, construction activity, fires, farming, and windblown dust.

Particulates are also formed in the atmosphere by condensation or transformation of emitted gases such as sulfur dioxide, nitrogen oxides, and volatile organic compounds into tiny droplets. The EPA has designated the San Joaquin Valley and the Sacramento Metropolitan Area as nonattainment areas for particulates. Like ozone, particulate concentrations in the Central Valley are improving. Between 1988 and 1995, annual particulate concentrations have declined 49% in the Sacramento Metropolitan Area and 33% in the San Joaquin Valley.<sup>32</sup>

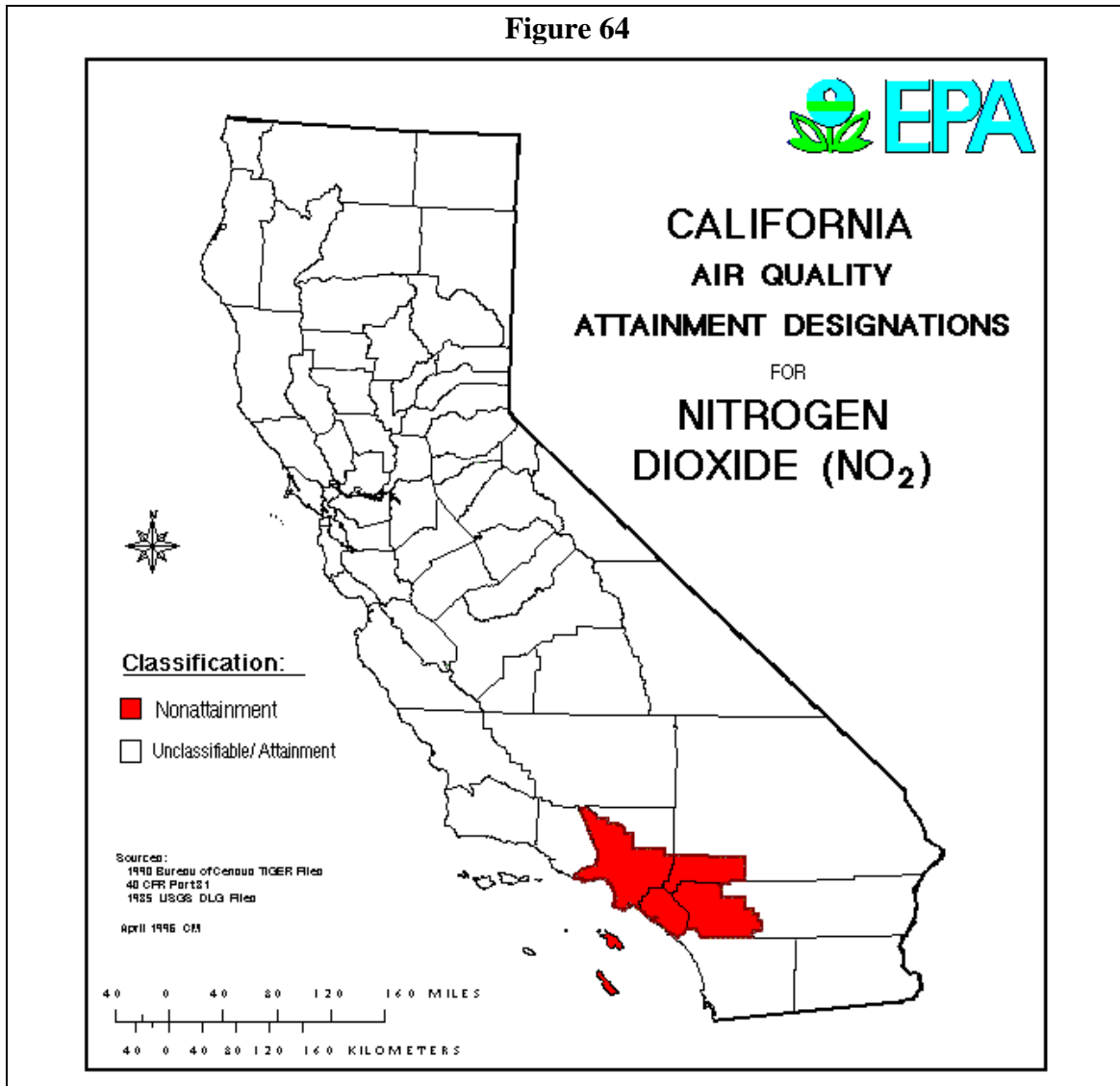


Carbon monoxide (CO) is a colorless, odorless, and poisonous gas produced by incomplete combustion of carbon in fuels. Two-thirds of the nationwide CO emissions are from transportation sources, with the largest contribution coming from highway motor vehicles. The EPA has designated most of the urbanized areas in the Central Valley as nonattainment areas. Some were recently redesignated as “attainment” as follows:

Bakersfield Metropolitan Area; Chico Urbanized Area; Fresno Urbanized Area; Modesto Urbanized Area; Sacramento Area, Urbanized parts of Sacramento, Placer, and Yolo Counties; and the Stockton Urbanized area. CO concentrations in the Central Valley are improving. Between 1986 and 1995, peak CO concentrations declined 33% in the Sacramento Metropolitan Area.<sup>33</sup>

Nitrogen dioxide (NO<sub>2</sub>) is a brownish, highly reactive gas that is present in urban atmospheres. However, EPA has not designated any Central Valley areas as nonattainment areas.

**Figure 64**





## **Plant and Animal Habitats of the Central Valley\***

The Central Valley contains a wide variety of natural habitats and wildlife, including many rare and endangered species. More than 400 different vertebrate species and hundreds of plant species can be found in the Central Valley.

### *RESERVES AND CONSERVATION AREAS*

The first two supplemental figures, "Central Valley Reserves and Conservation Areas" (north and south) show lands that are under some sort of special management to preserve habitat and/or open space. They range from wildlife refuges to ecological reserves and conservation easements. Various agencies and organizations own and operate the reserves and conservation areas, including:

- California Department of Fish and Game;
- California Department of Parks and Recreation;
- University of California;
- US Fish and Wildlife Service;
- US Bureau of Land Management; and
- The Nature Conservancy.

### *NATURAL VEGETATION*

The third supplemental figure, "Central Valley Natural Vegetation," shows the areas of natural vegetation still remaining in the Central Valley. There are approximately 6 million acres of natural vegetation in the Central Valley, mostly around the rim of the valley. More than half of this is grassland, although the native California grasses have been replaced by introduced European grasses. Approximately one-quarter of the natural vegetation area is oak woodland and the remainder consists of chaparral or shrubland and forest.

### *WETLANDS AND RIPARIAN AREAS*

The fourth and fifth supplemental figures, "Central Valley Wetlands and Riparian Habitats" (north and south), show the remaining wetlands and riparian areas in the Central Valley. Before the existing network of levees and dams was built, the Central Valley contained three large lakes. Tulare Lake, Buena Vista Lake, and Kern Lake, along with their adjacent marshes sloughs, and connecting channels, formed the largest wetland habitat in the state. It has been estimated that this system of lakes and wetlands contained more than 2,100 miles of shoreline marsh habitat.<sup>34</sup>

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\* Maps cited in this section, prepared by the Conservation Analysis Unit of the California Department of Fish and Game, will be found in a section of "Supplemental Figures" at the end of the paper. The maps are cited below by their respective titles.

### *BIOLOGICALLY RARE SPECIES AND HABITATS*

The sixth supplemental figure, "Central Valley Biologically Rare Species and Habitats," shows all of the habitat areas of biologically rare species found in the Central Valley, including listed species and equally rare species. Some ranges are home to highly mobile species, such as San Joaquin Kit Foxes. There are 107 plant species (1,747 locations), 85 animal species (2,441 locations), 23 terrestrial habitats (436 locations), and 3 aquatic habitats (6 locations) identified by the Department of Fish and Game's Natural Heritage Division. Plants include, for example, Mason's lilaeopsis, Ione manzanita, and adobe-lily. Animals include, for example, vernal pool fairy shrimp, Swainson's hawk, and bank swallows. Terrestrial habitats include valley sink scrub, Great Valley cottonwood riparian forest, and sycamore alluvial woodland. Aquatic habitats include Central Valley fall-run Chinook streams and Central Valley hardhead/squawfish streams.

### *LISTED SPECIES*

The final (seventh) supplemental figure, "Central Valley Listed Species," shows a subset of the data in the previous figure. It is limited to those Central Valley species listed under either the California or Federal Endangered Species Acts as rare, threatened, or endangered. This list includes 32 plant and 28 animal species.

### *WILDLIFE HABITATS IN THE GREAT CENTRAL VALLEY*

The following list shows the 23 types of general habitats found in the Central Valley. The list was created by the California Wildlife Habitat Relationships System, Department of Fish and Game.

- Alkali Desert Scrub
- Annual Grass (includes vernal pools as elements of the habitat)
- Barren
- Blue Oak Woodland
- Chamise-Redshank Chaparral
- Cropland
- Deciduous Orchard
- Dryland Grain Crops
- Evergreen Orchard
- Fresh Emergent Wetland
- Irrigated Grain Crops
- Irrigated Hayfield
- Irrigated Row and Field Crops
- Lacustrine
- Mixed Chaparral
- Orchard-Vineyard

- Pasture
- Perennial Grass
- Riverine
- Urban
- Valley Foothill Riparian
- Valley Oak Woodland
- Vineyard

Information on endangered species in California, by county, is available at the Web site operated by the California Department of Fish and Game, Natural Heritage Division, <http://www.dfg.ca.gov/Endangered/list.html>. Additional related information is available at <http://www.dfg.ca.gov/Nhd/index.html>, the Natural Heritage Division's home page.\*

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\* For more information on California's plant and animal life, see the "Sources and Further Reading" section, below, especially the books listed under "Agriculture, Environment, and Nature."



# Appendix Sources Notes

## Appendix: County Governments

This is a capsule overview of the role of counties in California government and of a few related points. The purpose is to provide some context for the possible implications of the statistics charted and discussed in this paper.

### Functions of Counties

Counties are administrative subdivisions of the state. All of their powers derive from the powers of the state. This, however, is an abstract legal definition, and does not tell the whole story. In reality, even while doing so within constraints imposed by the state, county governments exercise power in ways reflecting local conditions, resources, and personnel. Residents are affected by the work of their county governments and sometimes must cope with the effects of the limited resources of those governments.

One text on California government summarizes the role of the county as:

. . . a geographically defined administrative agency established by the state to provide statewide services at the local level. "State" services provided by the county include: welfare, health, courts, probation, jail, records, and tax assessment and collection. Services with more local control include: roads, parks, land use planning, zoning, development regulations, libraries, and law enforcement (the sheriff).<sup>35</sup>

Another book on California politics and government summarizes the role and organization of California's 58 counties in two paragraphs that neglect many county functions:

They operate the jails, courts, and the rest of the criminal justice system through which state laws are enforced. They conduct elections. They are the agents of the state welfare system and parts of the taxing system. They also provide minimal police and fire protection in unincorporated, usually rural, areas.

Counties are created by the state, and all are given the same "general law" charter, which provides for an elected five-member board of supervisors as the central government body. The board may hire a chief administrator, usually called the county executive, but counties also have elected sheriffs, tax assessors, district attorneys, and other administrators. California's eleven most urbanized counties are "home rule" rather than general law counties. This distinction simply means that the state has given them more options for organizing their governmental institutions. They could, for example, have eleven-member boards of supervisors, or they could choose to elect the county executive or choose not to elect the tax assessor.<sup>36</sup>

County functions may seem cut-and-dried, but they are important and directly affect the daily lives of their residents, despite the abbreviated treatment they receive in books on California government.<sup>37</sup> For this reason – their direct and daily impact – conditions affecting the operations of county governments are significant, and unusual conditions affecting rural counties, some of which are found in the Central Valley, deserve consideration in the analysis of state policy.

### **Cities and Counties**

Some functions belong to counties, but others may be carried out by cities. These include police protection, zoning and building regulation, and road construction and maintenance. Counties with much area encompassed by cities place more of the burden on city governments, and less on county governments. Typically, the rural counties, including those in the Central Valley, have smaller proportions of their land areas encompassed in incorporated cities than do the less rural counties. (Urban, coastal San Francisco is unique among all California counties in that it is *both* a city and a county.)

County governments, like city governments, not only provide services to their residents, but also serve as training grounds for public officials, some of whom eventually seek election to the Legislature, to statewide offices, or to Congress.

For information on county and other local government finances, see Helen C. Paik's CRB Issue Summary *Local Government Finances Since Proposition 13: An Historical Primer* (Sacramento: California Research Bureau, November 1995; CRB-IS-95-007).

## Sources and Further Reading

Unless otherwise indicated, all data in this report are from generally available published documents. For reference, all source publications are included in the "Statistics" section below.

The following list includes both books for reading and books for reference that may be of interest to readers of this report. Some pertain specifically to the Central Valley, and others pertain to California as a whole. This list includes most of the sources used in the preparation of *A Statistical Tour of California's Great Central Valley* and others that may be of special interest to readers who would like to have additional information on particular topics or about the Central Valley in general.

### General

Barich, Bill. *Big Dreams: Into the Heart of California*. N.Y.: Pantheon Books, 1994. A personal journey across much of California.

Bean, Walton, and James J. Rawls. *California: An Interpretive History*, Seventh Edition. N.Y.: McGraw-Hill, 1997. A highly regarded history.

Clarke, Thurston. *California Fault: Searching for the Spirit of a State Along the San Andreas*. N.Y.: Ballentine, 1996. A personal view, centered on the fault zone. Clarke is much more cynical and less sympathetic to California and the people he meets along his journey than is Bill Barich in *Big Dreams*.

deCos, Patricia L. *A Selected and Annotated Bibliography on California's Central Valley by Geographic and Subject Theme*. Sacramento: California Research Bureau, 1996. This is a wide-ranging and well organized guide to literature and documents about the Central Valley. There is something here to meet every interest.

Haslam, Gerald. *The Other California: The Great Central Valley in Life and Letters* [expanded and revised edition]. Reno: University of Nevada Press, 1994. Essays on the physical, historical, and social landscape of the Valley.

Haslam, Gerald W., ed. *Many Californias: Literature from the Golden State*. Reno: University of Nevada Press, 1992. Anthology of fiction and non-fiction.

Yogi, Stan. *Highway 99: A Literary Journey Through California's Great Central Valley*. Berkeley: Heyday Books, 1996. Anthology of fiction and non-fiction.

Walters, Dan. *The New California: Facing the 21st Century*, 2nd Edition. Sacramento: California Journal Press, 1992. The *Sacramento Bee* columnist's observations on



the state. Chapter 12 covers the San Joaquin Valley. Other chapters touch on other parts of the Central Valley.

### Photographic Essays

Johnson, Stephen, Gerald Haslam, and Robert Dawson. *The Great Central Valley: California's Heartland*. Berkeley: University of California Press, 1993.  
Photographs by Johnson and Dawson, text by Haslam. Narrative and wide-ranging photographs

Starr, Kevin (text), and Reg Morrison (photography). *Over California*. San Francisco: Weldon Owen Reference, Inc., 1995. The section titled "The Invented Garden" focuses on the Central Valley.

### Agriculture, Environment, and Nature

Bakker, Elna. *An Island Called California: An Ecological Introduction to Its Natural Communities*, Second Edition, Revised and Expanded. University of California Press, 1984.

*California Agriculture*. May-June 1998 issue (Volume 52, Number 3). This issue includes a special section on the theme "Where city meets country: farming at the fragile edge." Much of the focus of the section is on the Central Valley.

Kavanagh, James. *The Nature of California: An Introduction to Common Plants and Animals and Natural Attractions*. San Francisco: Waterford Press, 1994.

Palmer, Tim, editor. *California's Threatened Environment: Restoring the Dream*. Washington, D.C.: Island Press, 1993.

Powell, Jerry A., and Charles L. Hogue. *California Insects*. Berkeley: University of California Press, 1979

Scheuring, Ann Foley, ed. *A Guidebook to California Agriculture* (by the Faculty and Staff of the University of California). Berkeley: University of California Press, 1983. A comprehensive overview of California Agriculture up to the 1980s.

Schoenherr, Allan A. *A Natural History of California*. Berkeley: University of California Press, 1992.

Umbach, Kenneth W. *Agriculture, Water, and California's Drought of 1987-92: Background, Responses, Lessons*. Sacramento: California Research Bureau, 1994. A report on how California's farmers responded to the drought. Readable, considering the dry topic.

## Statistics

California Department of Employment Development. Labor market information:  
<http://www.calmis.cahwnet.gov/htmlfile/subject/lftable.htm>.

California Department of Education. Education data: <http://www.ed-data.k12.ca.us/>.

California Department of Health Services and the California Conference of Local Health Officers. *County Health Status Profiles, 1998*. Sacramento: the Department, 1998.

California Department of Finance. *California Statistical Abstract, 1997*. Sacramento: the department. This document is posted on the Internet at <http://www.dof.ca.gov/> .

California Department of Finance, Economic Research. *California County Profiles*. Sacramento: the Department, February 1998. Two-page-per-county summaries of economic and demographic facts about all 58 counties. This document is posted on the Internet at <http://www.dof.ca.gov/> .

California Department of Health Services. *Health Data Summaries for California Counties, 1996*. Sacramento: DHS Planning and Data Analysis Section, August 1996. This document is updated biennially. A new edition is due in August 1998.

California Postsecondary Education Commission. *Student Profiles 1997*. Commission Report 97-7, August 1997.

California State Controller. *State of California: Counties Annual Report, Fiscal Year 1995-96*. Sacramento: State Controller, 1997. Web site: <http://www.sco.ca.gov>.

Fay, James S., ed. *California Almanac*, 7th Edition. Santa Barbara, California: Pacific Data Resources, 1995.

Hall, George E., and Deirdre A. Gaquin, eds. *1997 County and City Extra: Annual Metro, City and County Data Book*. Lanham, MD: Bernan Press, 1997. This volume contains information from the *County and City Data Book*, published by the U.S. Government Printing Office, supplemented with additional and updated data.

U.S. Department of Commerce. *County and City Data Book, 1994* (12<sup>th</sup> Edition). Washington, D.C: Government Printing Office. This is a supplement to the *Statistical Abstract*.

## Notes

<sup>1</sup> You can e-mail me at [kumbach@library.ca.gov](mailto:kumbach@library.ca.gov), or mail comments to me at the address on the cover.

<sup>2</sup> The Valley has not shrunk since the first edition of this report. Rather, a reader pointed out my overexuberant estimation of the length.

<sup>3</sup> Department of Finance publications, including the County Profiles, are available at the department's Web site, <http://www.dof.ca.gov>. This is an extraordinarily useful site for anyone seeking statistical data about California. For a guide to some of the fascinating local history of the counties of the Central Valley, see Patricia L. deCos, *A Selected and Annotated Bibliography on California's Central Valley by Geographic and Subject Theme* (Sacramento: California Research Bureau, 1996).

<sup>4</sup> Land ownership figures reflect BLM data for 1987, as reproduced in the *California Almanac*, 3rd Edition.

<sup>5</sup> Additional land in counties with forests and rangelands is used at least in part for grazing, an agricultural use, but not included in "farms."

<sup>6</sup> The density figure at first seems improbable for a Central Valley county, but is the arithmetic result of more than 1.1 million people in a land area of 966 square miles.

<sup>7</sup> Comparisons of housing costs are not simple, as they reflect multiple factors that may be very difficult to sort out, including the size and quality of homes that are being bought and sold at the time and fluctuations that reflect small numbers of home sales for some times or areas. But to give a rough idea, data for November 1997 show the median sales price of detached homes as \$303,850 in the San Francisco area (including Santa Clara), in contrast to \$108,000 in the Central Valley (including Sacramento). Data from California Association of Realtors® *Trends in California Real Estate*, Volume 19, No. 1, January 1998.

<sup>8</sup> Data from the 1992 Census of Agriculture, as reported in California Department of Food and Agriculture, *California Agricultural Resource Directory*, 1997, p. 18.

<sup>9</sup> There is a striking view, looking roughly north from State Route 223, between Arvin and Highway 58. The traveler sees the demarcation between the checkered fields at the extreme southern tip of the Central Valley and the foothills of the Tehachapis. A clear line between green fields and brown scrub and dried grass (at least after the rainy season has ended) says "the Valley stops HERE." To the east lie first the Tehachapis and next the outright desert region known as the Mojave Desert. It is an endless source of fascination to traverse this area and to see the change in landforms and land uses along the way.

<sup>10</sup> Elias S. Lopez, "The California Central Valley versus Other States?" (Sacramento: California Research Bureau, 1996).

<sup>11</sup> For purposes of retaining relatively round five- and ten-year brackets, some charts have not been revised to reflect figures more recent than 1995. We anticipate an extensive revision and expansion of demographic data in a future edition of this report, after the 2000 Census data become available (probably in 2001 or 2002).

<sup>12</sup> The Department of Finance sometimes revises estimates in subsequent years, so the estimated 1996-97 growth figure for Kings County might change.

<sup>13</sup> See Kenneth W. Umbach, *Agriculture, Water, and California's Drought of 1987-92: Background, Responses, Lessons* (Sacramento: California Research Bureau, 1994).

<sup>14</sup> John Spitler, "El Niño's toll Rises to \$422 million," *Capital Press* (agricultural weekly), July 3, 1998, pp. 1-2. The article cited data reported by the California Department of Food and Agriculture. An earlier story in *Capital Press* (March 6, 1998) mentioned a CDFA estimate of \$245 million from the previous

season's flood. Even larger losses (over \$650 million) were reported in March of 1995, reflecting that year's weather problems.

<sup>15</sup> This may be due in significant measure to a relatively large migratory worker population in the Central Valley. A future paper may explore this issue in depth.

<sup>16</sup> The recently announced statewide test results (State Testing and Reporting – STAR) might be illuminating but came too late for inclusion in this paper, and are beset by controversy that has limited release of data.

<sup>17</sup> The reader should bear in mind that the Central Valley has many fine schools and accomplished students. The statistics only reflect averages and totals.

<sup>18</sup> The figures for Yolo and Placer on this chart were inadvertently switched in the 1997 edition of this report, and some other figures were mis-assigned in both charts of population with bachelor's degree.

<sup>19</sup> Year-to-year variations in the rate of college enrollment, by county, are intriguing, but a detailed examination is beyond the scope of this paper. The reader should bear in mind that a one-year snapshot gives a very incomplete picture, especially in counties with relatively small numbers of graduating high school seniors.

<sup>20</sup> Quoted from document titled "UC FACULTY COMMITTEE ISSUES RECOMMENDATIONS FOR 10<sup>th</sup> CAMPUS," dated November 19, 1997, posted at <http://www.senate.ucla.edu/News/10thcamp.htm>.

<sup>21</sup> For more information, and the source of this list, see <http://www.cccco.edu>, the home page of the California Community Colleges Chancellor's Office.

<sup>22</sup> The need to serve patients from an adjacent county, however, lowers the *effective* rate of physicians and hospital beds per 100,000 population in the county providing the service.

<sup>23</sup> The charts may visually understate the differences, as the baseline is zero. I have chosen to use a zero baseline both to be consistent with other charts in this paper and in recognition that any other choice would be arbitrary and would risk exaggerating the visual impression of differences on the measure.

<sup>24</sup> Note that the charts in this section in the 1997 edition pertained to *retail* sales. The charts in this edition are for the broader measure of all taxable sales.

<sup>25</sup> There are two stands, on opposite sides of Highway 99 about midway between Fresno and Sacramento. The one on the west side of the highway is now abandoned and graffiti covered. The one on the east side remains in business, but now sports a cover extending over seating in the front and an enclosure for added workspace in the back. Both are distinctive minor landmarks to those who travelled Highway 99 many years ago, when roadside businesses were more common and more frequently patronized by travellers. At one time there may have been more of these stands, but if so they are now gone.

<sup>26</sup> Union Pacific and Southern Pacific merged in 1996.

<sup>27</sup> See <http://www.dot.ca.gov/hq/rail/sjnews.htm>. The ridership data were posted in the May 17, 1998 update of "The Valley Flyer: Bulletin of the *San Joaquin* Rail Corridor," at that URL.

<sup>28</sup> CalTrans map from <http://www.dot.ca.gov/hq/rail/calmaps/calmap98.gif>, June 9, 1998.

<sup>29</sup> Farmland preservation is a complex issue that may be explored in a separate paper.

<sup>30</sup> Data in the table are from Central Valley Regional Water Quality Control Board, 303(d) List, Adopted by the State Water Quality Control Board on May 27, 1998.

<sup>31</sup> U.S. EPA, "Breathing Easier: A Report on Air Quality in Region 9," updated April 21, 1997, posted at <http://www.epa.gov/region09/air/breath96/>.

<sup>32</sup> U.S. EPA, "Breathing Easier: A Report on Air Quality in Region 9," updated April 21, 1997, posted at <http://www.epa.gov/region09/air/breath96/>.

<sup>33</sup> U.S. EPA, “Breathing Easier: A Report on Air Quality in Region 9,” updated April 21, 1997, posted at <http://www.epa.gov/region09/air/breath96/>.

<sup>34</sup> Allan A. Schoenherr, *A Natural History of California* (Berkeley: University of California Press, 1992), p. 526.

<sup>35</sup> Charles G. Bell and Charles M. Price, *California Government Today: Politics of Reform*, Second Edition (Homewood, Illinois: Dorsey Press, 1984), p. 332.

<sup>36</sup> Terry Christensen and Larry N. Gerston, *Politics in the Golden State: The California Connection*, Second Edition (Glenview, Illinois: Scott, Foresman and Company, 1988), pp. 157-8.

<sup>37</sup> Only about two pages are devoted specifically to county governments in *Power and Politics in California*, Third Edition, by John H. Culver and John C. Syer (N.Y.: Macmillan Publishing Company, 1988). *California Government Today* is somewhat more thorough, devoting about 7 pages to county government.